CEQA DRAINAGE STUDY

PIZZUTO PROPERTY
COUNTY of SAN DIEGO
TPM 20846/Log No. 04-08-030

Prepared for:

Carl and Silvia Pizzuto
773 Hillsboro Way
San Marcos, CA 92069

Prepared by:

bha, Inc.

land planning, civil engineering, surveying
5115 Avenida Encinas, Suite L
Carlsbad, CA 92008-4387
(760) 931-8700

December 14, 2005
Revised September 8, 2006

W.O. 555-0915-400

TABLE OF CONTENTS

I. Discussion: Purpose and Scope
Project Description
Study Method
Project Design
Conclusions

II. Calculations

Existing Hydrology
Proposed Hydrology
Proposed Hydraulics

III. Exhibits

Exhibit A: Existing Hydrology Map
Exhibit B: Proposed Hydrology Map

IV. References

I. DISCUSSION

PURPOSE AND SCOPE:

The purpose of this report is to publish the results of hydrology and hydraulic computer analysis for the proposed Tentative Parcel Map for Pizzuto Property - County of San Diego TPM 20846. The proposed project is a 41.1-acre site and is proposed to be subdivided into 3 residential lots. The scope is to study the existing and proposed hydrology and hydraulics as it influences the surrounding properties during a 100-year frequency storm event.

PROJECT DESCRIPTION:

Pizzuto Property is located on Clayton Place, approximately 1600 feet north of the intersection between Deer Spring Place and Deer Spring Road. The nearest major road are Deer Spring Road and Highway 15. This 41.1 acres property is surrounded mostly by undeveloped land and rural used land. The site is steeply sloped and currently undeveloped.

The project proposes the subdividing the site into 3 residential lots, with each lot no less than 4 acres in size. The project proposes the grading of pads, driveways, and the improvement of Clayton Place and Deer Spring Place. In general, the pads will be graded on top of the topography and the pads will drained away from the pads and the runoff released into the existing drainage courses. There is an existing 18-inch culvert on Clayton Place (Node 3), just after the Deer Spring Place transition. This culvert is currently under sized and will be replaced with a proposed 24-inch pipe during the improvement of Clayton Place. The runoff that enters onto Deer Spring Place (Basin 5) is conveyed to the intersection of Deer Spring Place and Deer Spring Road via existing brow ditch along the easterly side of Deer Spring Place. The existing brow ditch will be replaced by the proposed curb and gutter when Deer Spring Place is improved. Because the elongation of the time of concentration due to the flattening of the terrain for the building pads, the increase in the peak runoff due to this development is minium (0.2 c.f.s. per acre in the worst case, for 4.2 acre basin). Since this project is still in the tentative map stage, no actual storm drain facilities have been design. Final placement and sizing of the storm drain facilities will be designed during the final engineering stage. No runoff will be released from this project that will cause harm to lives or properties. Runoff will be released into existing terrain below erosive velocity.

Due to the steepness of the existing terrain, erosion is always a concern. Currently, asphalt check dams are placed on the northern portion of Clayton Place. In the developed condition, the slopes will be landscaped and protected by brow ditches. The existing culvert will be redesigned so that the runoff will be released into the exist drainage course below the erosive velocity.

STUDY METHOD:

The method of analysis was based on the Rational Method according to the San Diego County Hydrology Manual. The Hydrology and Hydraulic Analysis were done on HydroSoft by Advanced Engineering Software.

Drainage basin areas were determined from the proposed grades shown on the Tentative Map for Pizzuto Property and 200-scale existing topographic maps from the County of San Diego.

The Rational Method provided the following variable coefficients:

Soil group C will be used for a composite runoff coefficient for the existing and proposed hydrology analyses.

The runoff coefficient for:
Existing Condition = Undisturbed Natural terrain = 0.30
Proposed Condition = Low Density Residential (1 DU/A or less) = 0.36
Rainfall Intensity = I = 7.44x(P6)x(Tc)^0.645

P6 for 100 year storm = 3.5

See Table 1.1 below comparison of existing and proposed storm drain flows.

Table 1.1 - Comparison of Existing and Proposed Storm Drain Flows

Basin	Existing (cfs/ac)	Proposed (cfs/ac)
1 & 2	62.4/34.7	65.8/37.2
3	33.7/18.4	32.6/18.4
4	7.2/3.6	7.1/3.6
5	7.3/4.2	8.1/4.2

CONCLUSION:

The development of Pizzuto Property will disturbed approximately 3 acres of land or 10% of the total site. This project will change the land use from Natural Terrain to Low Density Residential-(1 du/a or less). Because this development proposes the flattening of the topography for the building pads, the time of concentration is elongated and the result is minimal increases in the peak runoff.

It was brought to our attention during the planning stage that this development have increased the peak runoff from Basin 1 & 2, (the peak runoff rate of 3.6 cfs for 34.7 acre

basin). However, with the new design, RPL #3, the time of concentration is prolonged and the peak runoff rate for Basin 1&2 has been reduced to the existing condition. Furthermore, from a field visit, the downstream channel that receives the runoff from node 14 (Basin 1 &2) is no less than 15 foot wide at its base. If there was an increase of 3.6 cfs than the water surface level would have been raised by approximately 0.2 feet.

Since, this project is still in it's tentative stage, no actual storm drain structure is being design at this point. Storm drain structure will be designed and sized during the final engineering stage. However, no runoff will be released from this project that will cause harm to lives or properties. Runoff will be released into the existing terrain through rip rap energy dissipaters at or below the erosive velocity (6 fps). Furthermore, on the steep sloping street, chevrons will be constructed at a interval that will reduce the quantity and the velocity of the runoff so that the runoff can be released safely into the natural ground.

DECLARATION OF RESPONSIBLE CHARGE

I hereby declare that I am the Engineer of Work for this project, that I have exercised responsible charge over the design of the project as defined in section 6703 of the business and professions code, and that the design is consistent with current standards.

I understand that the check of project drawings and specifications by the County of San Diego is confined to a review only and does not relieve me, as Engineer of Work, of my responsibilities for project design.

_____

Ronald L. Holloway R.C.E. 29271 Date

DECLARATION OF RESPONSIBLE CHARGE

I hereby declare that I am the Engineer of Work for this project, that I have exercised responsible charge over the design of the project as defined in section 6703 of the business and professions code, and that the design is consistent with current standards.

I understand that the check of project drawings and specifications by the County of San Diego is confined to a review only and does not relieve me, as Engineer of Work, of my responsibilities for project design.

_____

Ronald L. Holloway R.C.E. 29271 Date

II. CALCULATIONS

II. CALCULATIONS

A. EXISTING HYDROLOGY

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                        2003,1985,1981 HYDROLOGY MANUAL
       (c) Copyright 1982-2003 Advanced Engineering Software (aes)
           Ver. 1.5A Release Date: 01/01/2003  License ID 1459

                          Analysis prepared by:

                                bHA, Inc.
                          5115 Avenida Encinas, Suite L
                              Carlsbad, Calif 92008


--------------------------------------------------------------------------
  FILE NAME: K:\HYDRO\0915\EX1.DAT
  TIME/DATE OF STUDY: 13:05 04/04/2005
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   8.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ====  =====  ======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
| HYDROLOGY FOR PIZZUTO PROPERTY                                         |
| W.O. 555-0915-400                                                      |
| EXISTING BASIN 1 & 2                                                   |
+------------------------------------------------------------------------+

**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      2.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
  SOIL CLASSIFICATION IS "C"
```

```
  S.C.S. CURVE NUMBER (AMC II) =  85
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =   1296.00
  DOWNSTREAM ELEVATION(FEET) =   1275.00
  ELEVATION DIFFERENCE(FEET) =     21.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.979
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.217
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE      2.00 TO NODE      3.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1275.00  DOWNSTREAM(FEET) =    860.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1500.00   CHANNEL SLOPE =  0.2767
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.525
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  85
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     13.76
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.73
  AVERAGE FLOW DEPTH(FEET) =   0.26   TRAVEL TIME(MIN.) =   2.57
  Tc(MIN.) =   8.55
  SUBAREA AREA(ACRES) =    13.60       SUBAREA RUNOFF(CFS) =   26.62
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.300
  TOTAL AREA(ACRES) =     13.71         PEAK FLOW RATE(CFS) =      26.84

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.38   FLOW VELOCITY(FEET/SEC.) =  12.31
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE      3.00 =  1580.00 FEET.

+--------------------------------------------------------------------------+
| EXISTING 18" CSP PIPE                                                    |
| UNDER CLAYTON PLACE                                                      |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE      3.00 TO NODE      3.10 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   860.00  DOWNSTREAM(FEET) =   850.00
  FLOW LENGTH(FEET) =    80.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  21.95
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     26.84
  PIPE TRAVEL TIME(MIN.) =   0.06    Tc(MIN.) =   8.61
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE      3.10 =  1660.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE      3.10 TO NODE     14.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    850.00  DOWNSTREAM(FEET) =    822.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   450.00   CHANNEL SLOPE =  0.0622
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.056
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  85
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     28.31
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   7.61
  AVERAGE FLOW DEPTH(FEET) =   0.60   TRAVEL TIME(MIN.) =   0.99
  Tc(MIN.) =   9.60
  SUBAREA AREA(ACRES) =     1.62       SUBAREA RUNOFF(CFS) =    2.94
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.300
  TOTAL AREA(ACRES) =     15.33         PEAK FLOW RATE(CFS) =      27.85

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.59   FLOW VELOCITY(FEET/SEC.) =   7.60
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE     14.00 =  2110.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     14.00 TO NODE     14.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE     11.00 TO NODE     12.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  85
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1216.00
  DOWNSTREAM ELEVATION(FEET) =   1200.00
  ELEVATION DIFFERENCE(FEET) =     16.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    6.684
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.647
  SUBAREA RUNOFF(CFS) =      0.23
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.23

****************************************************************************
  FLOW PROCESS FROM NODE     12.00 TO NODE     13.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
```

```
 ELEVATION DATA: UPSTREAM(FEET) =   1200.00  DOWNSTREAM(FEET) =    850.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1210.00   CHANNEL SLOPE =  0.2893
 CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
 MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.510
 NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
 SOIL CLASSIFICATION IS "C"
 S.C.S. CURVE NUMBER (AMC II) =  85
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     16.54
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  10.65
 AVERAGE FLOW DEPTH(FEET) =   0.28   TRAVEL TIME(MIN.) =   1.89
 Tc(MIN.) =   8.58
 SUBAREA AREA(ACRES) =    16.60       SUBAREA RUNOFF(CFS) =   32.42
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.300
 TOTAL AREA(ACRES) =     16.70         PEAK FLOW RATE(CFS) =      32.62

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.42   FLOW VELOCITY(FEET/SEC.) =  13.42
 LONGEST FLOWPATH FROM NODE     11.00 TO NODE     13.00 =  1310.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     13.00 TO NODE     14.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    850.00  DOWNSTREAM(FEET) =    822.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   350.00   CHANNEL SLOPE =  0.0800
 CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
 MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.208
 NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
 SOIL CLASSIFICATION IS "C"
 S.C.S. CURVE NUMBER (AMC II) =  85
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     35.13
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.90
 AVERAGE FLOW DEPTH(FEET) =   0.63   TRAVEL TIME(MIN.) =   0.66
 Tc(MIN.) =   9.23
 SUBAREA AREA(ACRES) =     2.70       SUBAREA RUNOFF(CFS) =    5.03
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.300
 TOTAL AREA(ACRES) =     19.40         PEAK FLOW RATE(CFS) =      36.13

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.64   FLOW VELOCITY(FEET/SEC.) =   8.93
 LONGEST FLOWPATH FROM NODE     11.00 TO NODE     14.00 =  1660.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     14.00 TO NODE     14.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM     RUNOFF     Tc       INTENSITY     AREA
 NUMBER      (CFS)   (MIN.)    (INCH/HOUR)   (ACRE)
    1       36.13     9.23        6.208       19.40
 LONGEST FLOWPATH FROM NODE     11.00 TO NODE     14.00 =  1660.00 FEET.
```

```
 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc       INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)    (INCH/HOUR)   (ACRE)
    1        27.85      9.60        6.056       15.33
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE     14.00 =  2110.00 FEET.

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF        Tc       INTENSITY
 NUMBER     (CFS)      (MIN.)    (INCH/HOUR)
    1       62.94        9.23        6.208
    2       63.10        9.60        6.056

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     63.10   Tc(MIN.) =    9.60
 TOTAL AREA(ACRES) =     34.73

****************************************************************************
 FLOW PROCESS FROM NODE     14.00 TO NODE     14.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =     34.73  TC(MIN.) =      9.60
 PEAK FLOW RATE(CFS)    =     63.10
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
          (c) Copyright 1982-2003 Advanced Engineering Software (aes)
              Ver. 1.5A Release Date: 01/01/2003  License ID 1459

                              Analysis prepared by:

                                    bHA, Inc.
                               5115 Avenida Encinas, Suite L
                                   Carlsbad, Calif 92008


--------------------------------------------------------------------------
  FILE NAME: K:\HYDRO\0915\EX3.DAT
  TIME/DATE OF STUDY: 15:22 11/18/2004
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   8.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  ===== ======= ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
| HYDROLOGY FOR PIZZUTO PROPERTY                                         |
| W.O. 555-0915-400                                                      |
| EXISTING BASIN 3                                                       |
+------------------------------------------------------------------------+

**************************************************************************
  FLOW PROCESS FROM NODE     21.00 TO NODE     22.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
  SOIL CLASSIFICATION IS "C"
```

```
  S.C.S. CURVE NUMBER (AMC II) =  85
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =   1204.00
  DOWNSTREAM ELEVATION(FEET) =   1175.00
  ELEVATION DIFFERENCE(FEET) =     29.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.979
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.217
  SUBAREA RUNOFF(CFS) =      0.67
  TOTAL AREA(ACRES) =      0.27   TOTAL RUNOFF(CFS) =      0.67

****************************************************************************
  FLOW PROCESS FROM NODE     22.00 TO NODE     23.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1175.00  DOWNSTREAM(FEET) =    808.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1960.00   CHANNEL SLOPE =  0.1872
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.115
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  85
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     17.62
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.41
  AVERAGE FLOW DEPTH(FEET) =   0.33   TRAVEL TIME(MIN.) =   3.47
  Tc(MIN.) =   9.45
  SUBAREA AREA(ACRES) =    18.10       SUBAREA RUNOFF(CFS) =   33.21
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.300
  TOTAL AREA(ACRES) =     18.37         PEAK FLOW RATE(CFS) =      33.70

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.48   FLOW VELOCITY(FEET/SEC.) =  11.68
  LONGEST FLOWPATH FROM NODE     21.00 TO NODE     23.00 =  2040.00 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =     18.37  TC(MIN.) =      9.45
  PEAK FLOW RATE(CFS)    =     33.70
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
          (c) Copyright 1982-2003 Advanced Engineering Software (aes)
              Ver. 1.5A Release Date: 01/01/2003  License ID 1459

                            Analysis prepared by:

                                   bHA, Inc.
                              5115 Avenida Encinas, Suite L
                                  Carlsbad, Calif 92008


--------------------------------------------------------------------------
  FILE NAME: K:\HYDRO\0915\EX4.DAT
  TIME/DATE OF STUDY: 15:29 11/18/2004
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   8.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
| HYDROLOGY FOR PIZZUTO PROPERTY                                         |
| W.O. 555-0915-400                                                      |
| EXISTING BASIN 4                                                       |
+------------------------------------------------------------------------+

**************************************************************************
  FLOW PROCESS FROM NODE     11.00 TO NODE     32.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
  SOIL CLASSIFICATION IS "C"
```

```
  S.C.S. CURVE NUMBER (AMC II) =  85
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1216.00
  DOWNSTREAM ELEVATION(FEET) =   1175.00
  ELEVATION DIFFERENCE(FEET) =     41.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    6.684
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.647
  SUBAREA RUNOFF(CFS) =      0.25
  TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.25

****************************************************************************
  FLOW PROCESS FROM NODE     32.00 TO NODE     33.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1175.00  DOWNSTREAM(FEET) =    985.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   650.00   CHANNEL SLOPE =  0.2923
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.571
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .3000
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  85
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      3.76
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.12
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   1.77
  Tc(MIN.) =   8.46
  SUBAREA AREA(ACRES) =     3.53       SUBAREA RUNOFF(CFS) =    6.96
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.300
  TOTAL AREA(ACRES) =      3.64          PEAK FLOW RATE(CFS) =       7.18

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.17   FLOW VELOCITY(FEET/SEC.) =   7.87
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     33.00 =   750.00 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      3.64  TC(MIN.) =      8.46
  PEAK FLOW RATE(CFS)   =      7.18
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
          (c) Copyright 1982-2003 Advanced Engineering Software (aes)
              Ver. 1.5A Release Date: 01/01/2003  License ID 1459

                              Analysis prepared by:

                                    bHA, Inc.
                               5115 Avenida Encinas, Suite L
                                  Carlsbad, Calif 92008


--------------------------------------------------------------------------
  FILE NAME: K:\HYDRO\0915\EX-5.DAT
  TIME/DATE OF STUDY: 08:32 12/06/2004
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   8.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  ===== ======  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
| HYDROLOGY FOR PIZZUTO PROPERTY                                         |
| W.O. 555-0915-400                                                      |
| EXISTING BASIN 5                                                       |
+------------------------------------------------------------------------+

**************************************************************************
  FLOW PROCESS FROM NODE     40.00 TO NODE     41.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
```

```
  S.C.S. CURVE NUMBER (AMC II) =  76
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =    962.50
  DOWNSTREAM ELEVATION(FEET) =    900.00
  ELEVATION DIFFERENCE(FEET) =     62.50
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.866
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.319
  SUBAREA RUNOFF(CFS) =      0.18
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.18

****************************************************************************
  FLOW PROCESS FROM NODE     41.00 TO NODE     42.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    900.00  DOWNSTREAM(FEET) =    868.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   380.00   CHANNEL SLOPE =  0.0842
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  CHANNEL FLOW THRU SUBAREA(CFS) =      0.18
  FLOW VELOCITY(FEET/SEC.) =   1.29   FLOW DEPTH(FEET) =   0.03
  TRAVEL TIME(MIN.) =   4.93   Tc(MIN.) =  10.79
  LONGEST FLOWPATH FROM NODE     40.00 TO NODE     42.00 =   470.00 FEET.

+--------------------------------------------------------------------------+
| BROW DITCH IS ANALYSIS AS IF                                             |
| IT WAS A 36" PIPE FLOWING NO MORE THAN                                   |
| HALF FULL                                                                |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE     42.00 TO NODE     43.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   868.00  DOWNSTREAM(FEET) =   805.00
  FLOW LENGTH(FEET) =   760.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  36.0 INCH PIPE IS   0.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.12
  GIVEN PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.18
  PIPE TRAVEL TIME(MIN.) =   3.08    Tc(MIN.) =  13.87
  LONGEST FLOWPATH FROM NODE     40.00 TO NODE     43.00 =  1230.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     42.00 TO NODE     43.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.775
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.3600
```

```
 SUBAREA AREA(ACRES) =     4.18   SUBAREA RUNOFF(CFS) =     7.19
 TOTAL AREA(ACRES) =       4.24   TOTAL RUNOFF(CFS) =     7.29
 TC(MIN.) =  13.87
================================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =       4.24  TC(MIN.) =      13.87
 PEAK FLOW RATE(CFS)    =       7.29
================================================================================
================================================================================
 END OF RATIONAL METHOD ANALYSIS
```

II. CALCULATIONS

B. PROPOSED HYDROLOGY

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                        2003,1985,1981 HYDROLOGY MANUAL
       (c) Copyright 1982-2005 Advanced Engineering Software (aes)
           Ver. 2.0 Release Date: 06/01/2005  License ID 1459

                          Analysis prepared by:

                                BHA, INC
                          5115 Avenida Encinas Suite L
                              Carlsbad, CA 92008
                                (760) 931-8700

--------------------------------------------------------------------------
  FILE NAME: K:\HYDRO\0915\P1.DAT
  TIME/DATE OF STUDY: 01:22 09/08/2006
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   8.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
| HYDROLOGY FOR PIZZUTO PROPERTY                                         |
| W.O. 555-0915-400                                                      |
| PROPOSED BASIN 1 & 2                                                   |
+------------------------------------------------------------------------+

**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      2.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =   1296.00
  DOWNSTREAM ELEVATION(FEET) =   1275.00
```

```
 ELEVATION DIFFERENCE(FEET) =     21.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.530
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.641
 SUBAREA RUNOFF(CFS) =      0.34
 TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.34

****************************************************************************
 FLOW PROCESS FROM NODE      2.00 TO NODE      3.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1275.00  DOWNSTREAM(FEET) =    860.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1500.00   CHANNEL SLOPE =  0.2767
 CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
 MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.876
 RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
 SOIL CLASSIFICATION IS "C"
 S.C.S. CURVE NUMBER (AMC II) =  76
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     17.40
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  10.64
 AVERAGE FLOW DEPTH(FEET) =   0.29   TRAVEL TIME(MIN.) =   2.35
 Tc(MIN.) =   7.88
 SUBAREA AREA(ACRES) =    13.60       SUBAREA RUNOFF(CFS) =   33.67
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.360
 TOTAL AREA(ACRES) =     13.71          PEAK FLOW RATE(CFS) =      33.94

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.43   FLOW VELOCITY(FEET/SEC.) =  13.40
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      3.00 =  1580.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      3.00 TO NODE      3.10 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   860.00  DOWNSTREAM(FEET) =   850.00
 FLOW LENGTH(FEET) =    80.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS  11.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  23.48
 GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     33.94
 PIPE TRAVEL TIME(MIN.) =   0.06    Tc(MIN.) =   7.94
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      3.10 =  1660.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      3.10 TO NODE     14.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    850.00  DOWNSTREAM(FEET) =    822.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   450.00   CHANNEL SLOPE =  0.0622
 CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
 MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.390
 RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
 SOIL CLASSIFICATION IS "C"
```

```
  S.C.S. CURVE NUMBER (AMC II) =  76
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     38.54
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.39
  AVERAGE FLOW DEPTH(FEET) =   0.71   TRAVEL TIME(MIN.) =   0.89
  Tc(MIN.) =   8.83
  SUBAREA AREA(ACRES) =     4.00       SUBAREA RUNOFF(CFS) =    9.20
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.360
  TOTAL AREA(ACRES) =     17.71         PEAK FLOW RATE(CFS) =      40.74

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.74   FLOW VELOCITY(FEET/SEC.) =   8.54
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE     14.00 =  2110.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     14.00 TO NODE     14.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE     11.00 TO NODE     12.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1175.00
  DOWNSTREAM ELEVATION(FEET) =   1174.00
  ELEVATION DIFFERENCE(FEET) =      1.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =   11.144
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    70.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.499
  SUBAREA RUNOFF(CFS) =      0.20
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.20

****************************************************************************
  FLOW PROCESS FROM NODE     12.00 TO NODE     12.10 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1174.00  DOWNSTREAM(FEET) =   1072.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   250.00   CHANNEL SLOPE =  0.4080
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.296
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      2.86
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.24
  AVERAGE FLOW DEPTH(FEET) =   0.09   TRAVEL TIME(MIN.) =   0.67
  Tc(MIN.) =  11.81
  SUBAREA AREA(ACRES) =     2.80       SUBAREA RUNOFF(CFS) =    5.34
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.360
  TOTAL AREA(ACRES) =      2.90         PEAK FLOW RATE(CFS) =       5.53
```

```
  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.13   FLOW VELOCITY(FEET/SEC.) =   7.92
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     12.10 =   350.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     12.10 TO NODE     12.20 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1072.00  DOWNSTREAM(FEET) =  1066.00
  FLOW LENGTH(FEET) =    45.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS   4.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.87
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      5.53
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =  11.86
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     12.20 =   395.00 FEET.

+--------------------------------------------------------------------------+
| BEGIN BROW DITCH ANALYSIS                                                |
| BROW DITCH ANALYSIS AS IF IT WAS A 36 INCH                               |
| PIPE FLOWING NO MORE THAN HALF FULL.                                     |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE     12.20 TO NODE     12.30 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1066.00  DOWNSTREAM(FEET) =   980.00
  FLOW LENGTH(FEET) =   425.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  36.0 INCH PIPE IS   3.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.81
  GIVEN PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      5.53
  PIPE TRAVEL TIME(MIN.) =   0.45    Tc(MIN.) =  12.31
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     12.30 =   820.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     12.20 TO NODE     12.30 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.157
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.3600
  SUBAREA AREA(ACRES) =     5.20   SUBAREA RUNOFF(CFS) =     9.65
  TOTAL AREA(ACRES) =       8.10   TOTAL RUNOFF(CFS) =    15.04
  TC(MIN.) =  12.31

****************************************************************************
  FLOW PROCESS FROM NODE     12.30 TO NODE     12.40 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
```

```
  ELEVATION DATA: UPSTREAM(FEET) =   980.00  DOWNSTREAM(FEET) =   955.00
  FLOW LENGTH(FEET) =    85.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS   6.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  26.19
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     15.04
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =  12.36
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     12.40 =   905.00 FEET.

+----------------------------------------------------------------------------+
| BEGIN BROW DITCH                                                           |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE     12.40 TO NODE     12.50 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   955.00  DOWNSTREAM(FEET) =   880.00
  FLOW LENGTH(FEET) =   170.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  36.0 INCH PIPE IS   4.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  28.04
  GIVEN PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     15.04
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =  12.47
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     12.50 =  1075.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     12.50 TO NODE     12.50 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE     13.00 TO NODE     13.10 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1150.00
  DOWNSTREAM ELEVATION(FEET) =     13.10
  ELEVATION DIFFERENCE(FEET) =   1136.90
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    6.183
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.041
  SUBAREA RUNOFF(CFS) =      0.72
  TOTAL AREA(ACRES) =      0.25   TOTAL RUNOFF(CFS) =      0.72

****************************************************************************
  FLOW PROCESS FROM NODE     13.10 TO NODE     12.50 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1130.00  DOWNSTREAM(FEET) =   880.00
```

```
 FLOW LENGTH(FEET) =   600.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  36.0 INCH PIPE IS   1.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  10.97
 GIVEN PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      0.72
 PIPE TRAVEL TIME(MIN.) =   0.91    Tc(MIN.) =   7.09
 LONGEST FLOWPATH FROM NODE     13.00 TO NODE     12.50 =   700.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     13.10 TO NODE     12.50 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.358
 RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
 SOIL CLASSIFICATION IS "C"
 S.C.S. CURVE NUMBER (AMC II) =  76
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3600
 SUBAREA AREA(ACRES) =    4.90   SUBAREA RUNOFF(CFS) =   12.98
 TOTAL AREA(ACRES) =      5.15   TOTAL RUNOFF(CFS) =   13.64
 TC(MIN.) =   7.09

****************************************************************************
 FLOW PROCESS FROM NODE     12.50 TO NODE     12.50 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM     RUNOFF     Tc       INTENSITY     AREA
 NUMBER      (CFS)   (MIN.)   (INCH/HOUR)   (ACRE)
    1       13.64     7.09        7.358        5.15
 LONGEST FLOWPATH FROM NODE     13.00 TO NODE     12.50 =   700.00 FEET.

 ** MEMORY BANK #  2 CONFLUENCE DATA **
 STREAM     RUNOFF     Tc       INTENSITY     AREA
 NUMBER      (CFS)   (MIN.)   (INCH/HOUR)   (ACRE)
    1       15.04    12.47        5.116        8.10
 LONGEST FLOWPATH FROM NODE     11.00 TO NODE     12.50 =  1075.00 FEET.

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc       INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
    1      22.20       7.09        7.358
    2      24.52      12.47        5.116

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     24.52   Tc(MIN.) =   12.47
 TOTAL AREA(ACRES) =     13.25

****************************************************************************
 FLOW PROCESS FROM NODE     12.50 TO NODE     12.50 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE     12.50 TO NODE     12.60 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
```

```
==========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   880.00  DOWNSTREAM(FEET) =   864.00
  FLOW LENGTH(FEET) =   135.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS   9.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  21.13
  GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     24.52
  PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =  12.57
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     12.60 =  1210.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     12.60 TO NODE     14.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    864.00  DOWNSTREAM(FEET) =    822.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   400.00   CHANNEL SLOPE =  0.1050
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.907
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     30.07
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.22
  AVERAGE FLOW DEPTH(FEET) =   0.54   TRAVEL TIME(MIN.) =   0.72
  Tc(MIN.) =  13.30
  SUBAREA AREA(ACRES) =     6.28       SUBAREA RUNOFF(CFS) =   11.09
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.360
  TOTAL AREA(ACRES) =     19.53         PEAK FLOW RATE(CFS) =      34.50

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.58   FLOW VELOCITY(FEET/SEC.) =   9.72
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     14.00 =  1610.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     14.00 TO NODE     14.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1       34.50    13.30        4.907       19.53
  LONGEST FLOWPATH FROM NODE     11.00 TO NODE     14.00 =  1610.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1       40.74     8.83        6.390       17.71
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE     14.00 =  2110.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1      63.65       8.83        6.390
     2      65.79      13.30        4.907

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```

```
 PEAK FLOW RATE(CFS) =     65.79   Tc(MIN.) =   13.30
 TOTAL AREA(ACRES) =     37.24

****************************************************************************
 FLOW PROCESS FROM NODE     14.00 TO NODE     14.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)     =     37.24  TC(MIN.) =     13.30
 PEAK FLOW RATE(CFS)   =     65.79
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
          (c) Copyright 1982-2003 Advanced Engineering Software (aes)
              Ver. 1.5A Release Date: 01/01/2003  License ID 1459

                              Analysis prepared by:

                                    bHA, Inc.
                              5115 Avenida Encinas, Suite L
                                  Carlsbad, Calif 92008


--------------------------------------------------------------------------
  FILE NAME: K:\HYDRO\0915\P3.DAT
  TIME/DATE OF STUDY: 14:14 12/01/2004
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   8.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  ===== ======  ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
| HYDROLOGY FOR PIZZUTO PROPERTY                                         |
| W.O. 555-0915-400                                                      |
| PROPOSED BASIN 3                                                       |
+------------------------------------------------------------------------+

**************************************************************************
  FLOW PROCESS FROM NODE     17.00 TO NODE     22.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
```

```
  S.C.S. CURVE NUMBER (AMC II) =  76
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1185.00
  DOWNSTREAM ELEVATION(FEET) =   1183.00
  ELEVATION DIFFERENCE(FEET) =      2.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    9.747
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    85.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.995
  SUBAREA RUNOFF(CFS) =      0.65
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.65

****************************************************************************
  FLOW PROCESS FROM NODE     22.00 TO NODE     23.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1183.00  DOWNSTREAM(FEET) =    808.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1940.00   CHANNEL SLOPE =  0.1933
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.934
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     16.84
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.41
  AVERAGE FLOW DEPTH(FEET) =   0.32   TRAVEL TIME(MIN.) =   3.44
  Tc(MIN.) =  13.18
  SUBAREA AREA(ACRES) =    18.07       SUBAREA RUNOFF(CFS) =   32.10
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.360
  TOTAL AREA(ACRES) =     18.37         PEAK FLOW RATE(CFS) =      32.63

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.47   FLOW VELOCITY(FEET/SEC.) =  11.68
  LONGEST FLOWPATH FROM NODE     17.00 TO NODE     23.00 =  2040.00 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =     18.37  TC(MIN.) =     13.18
  PEAK FLOW RATE(CFS)    =     32.63
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
          (c) Copyright 1982-2003 Advanced Engineering Software (aes)
              Ver. 1.5A Release Date: 01/01/2003  License ID 1459

                              Analysis prepared by:

                                    bHA, Inc.
                              5115 Avenida Encinas, Suite L
                                  Carlsbad, Calif 92008


--------------------------------------------------------------------------
  FILE NAME: K:\HYDRO\0915\P4.DAT
  TIME/DATE OF STUDY: 14:19 12/01/2004
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   8.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
| HYDROLOGY FOR PIZZUTO PROPERTY                                         |
| W.O. 555-0915-400                                                      |
| PROPOSED BASIN 4                                                       |
+------------------------------------------------------------------------+

**************************************************************************
  FLOW PROCESS FROM NODE     31.00 TO NODE     32.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
```

```
  S.C.S. CURVE NUMBER (AMC II) =  76
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1175.00
  DOWNSTREAM ELEVATION(FEET) =   1173.00
  ELEVATION DIFFERENCE(FEET) =      2.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    9.747
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    85.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.995
  SUBAREA RUNOFF(CFS) =      0.65
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.65

****************************************************************************
  FLOW PROCESS FROM NODE     32.00 TO NODE     33.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1173.00  DOWNSTREAM(FEET) =    985.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   650.00   CHANNEL SLOPE =  0.2892
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.395
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      3.90
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.25
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   1.73
  Tc(MIN.) =  11.48
  SUBAREA AREA(ACRES) =     3.34       SUBAREA RUNOFF(CFS) =    6.49
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.360
  TOTAL AREA(ACRES) =      3.64          PEAK FLOW RATE(CFS) =       7.07

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.17   FLOW VELOCITY(FEET/SEC.) =   7.75
  LONGEST FLOWPATH FROM NODE     31.00 TO NODE     33.00 =   750.00 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      3.64  TC(MIN.) =     11.48
  PEAK FLOW RATE(CFS)    =      7.07
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
          (c) Copyright 1982-2003 Advanced Engineering Software (aes)
              Ver. 1.5A Release Date: 01/01/2003  License ID 1459

                              Analysis prepared by:

                                    bHA, Inc.
                              5115 Avenida Encinas, Suite L
                                  Carlsbad, Calif 92008


--------------------------------------------------------------------------
  FILE NAME: K:\HYDRO\0915\P5.DAT□T□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
  TIME/DATE OF STUDY: 08:39 12/06/2004
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   8.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.    (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
| HYDROLOGY FOR PIZZUTO PROPERTY                                         |
| W.O. 555-0915-400                                                      |
| PROPOSED BASIN 5                                                       |
+------------------------------------------------------------------------+

**************************************************************************
  FLOW PROCESS FROM NODE     40.00 TO NODE     41.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
```

```
  S.C.S. CURVE NUMBER (AMC II) =  76
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =    962.50
  DOWNSTREAM ELEVATION(FEET) =    900.00
  ELEVATION DIFFERENCE(FEET) =     62.50
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.866
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.319
  SUBAREA RUNOFF(CFS) =      0.18
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.18

****************************************************************************
  FLOW PROCESS FROM NODE     41.00 TO NODE     42.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    900.00  DOWNSTREAM(FEET) =    868.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   380.00   CHANNEL SLOPE =  0.0842
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  CHANNEL FLOW THRU SUBAREA(CFS) =      0.18
  FLOW VELOCITY(FEET/SEC.) =   1.29   FLOW DEPTH(FEET) =   0.03
  TRAVEL TIME(MIN.) =   4.93   Tc(MIN.) =  10.79
  LONGEST FLOWPATH FROM NODE     40.00 TO NODE     42.00 =   470.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     42.00 TO NODE     43.00 IS CODE =  61
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STANDARD CURB SECTION USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  868.00  DOWNSTREAM ELEVATION(FEET) =  805.00
  STREET LENGTH(FEET) =   418.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 14.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   9.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       4.20
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.26
    HALFSTREET FLOOD WIDTH(FEET) =    6.79
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    7.24
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.90
  STREET FLOW TRAVEL TIME(MIN.) =   0.96   Tc(MIN.) =  11.76
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.313
  RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .3600
  SOIL CLASSIFICATION IS "C"
  S.C.S. CURVE NUMBER (AMC II) =  76
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.360
```

```
 SUBAREA AREA(ACRES) =     4.18      SUBAREA RUNOFF(CFS) =     7.99
 TOTAL AREA(ACRES) =       4.24        PEAK FLOW RATE(CFS) =       8.11

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   9.25
 FLOW VELOCITY(FEET/SEC.) =  8.32   DEPTH*VELOCITY(FT*FT/SEC.) =   2.59
 LONGEST FLOWPATH FROM NODE     40.00 TO NODE     43.00 =   888.00 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =      4.24  TC(MIN.) =     11.76
 PEAK FLOW RATE(CFS)    =      8.11
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

II. CALCULATIONS

C. PROPOSED HYDRAULIC

Manning Pipe Calculator

24-Inch Pipe at Node 3.0

Given Input Data:

Shape	Circular
Solving for	Depth of Flow
Diameter	2.0000 ft
Flowrate	40.5000 cfs
Slope	0.1250 ft/ft
Manning's n	0.0135

Computed Results:

Depth	1.0303 ft
Area	3.1416 ft2
Wetted Area	1.6314 ft2
Wetted Perimeter	3.2023 ft
Perimeter	6.2832 ft
Velocity	24.8247 fps
Hydraulic Radius	0.5095 ft
Percent Full	51.5164 %
Full flow Flowrate	77.0200 cfs
Full flow velocity	24.5162 fps

III. EXHIBITS

COUNTY OF SAN DIEGO

TOPOGRAPHIC SURVEY

-LEGEND-

- Horizontal Control Monument *Third Order* / Vertical Control Monument *Second Order or Better*
- Horizontal Control Monument *Second Order or Better* / Vertical Control Monument *Third Order*
- Horizontal Control Monument *Second Order or Better*
- Horizontal Control Monument & Bench Mark *Second Order or Better*
- Horizontal Control Monument *Third Order.*
- Horizontal Control Monument & Bench Mark *Third Order*
- Bench Mark *Second Order or Better*
- Vertical Control Monument *Third Order*
- 4 | 3 / 9 | 10 T10S T11S R1W R2W — Found Section, Grant or Subdivision Corner.
- Photograph, Nadir Point
- Geographic Tick

BOUNDARIES IN ORDER OF PRECEDENCE

.025" ____ National

Name .025" / Name ____ County

.015" ____ City (*Use at Border with County*)

Name within Bdry .015" ____ Reservation

Name within Bdry, .015" ____ National, State or County Park

Name within Bdry. .015" ____ Land Grant

T 2 S / T 3 S .015" ____ Township, Range, Section or Subdivision (*Name of Subdivision within Bdry.*)

PREPARED UNDER THE DIRECTION OF THE COUNTY ENGINEER OF THE COUNTY OF SAN DIEGO, CALIFORNIA.

MAP CONTROL DATA FURNISHED BY THE COUNTY OF SAN DIEGO.

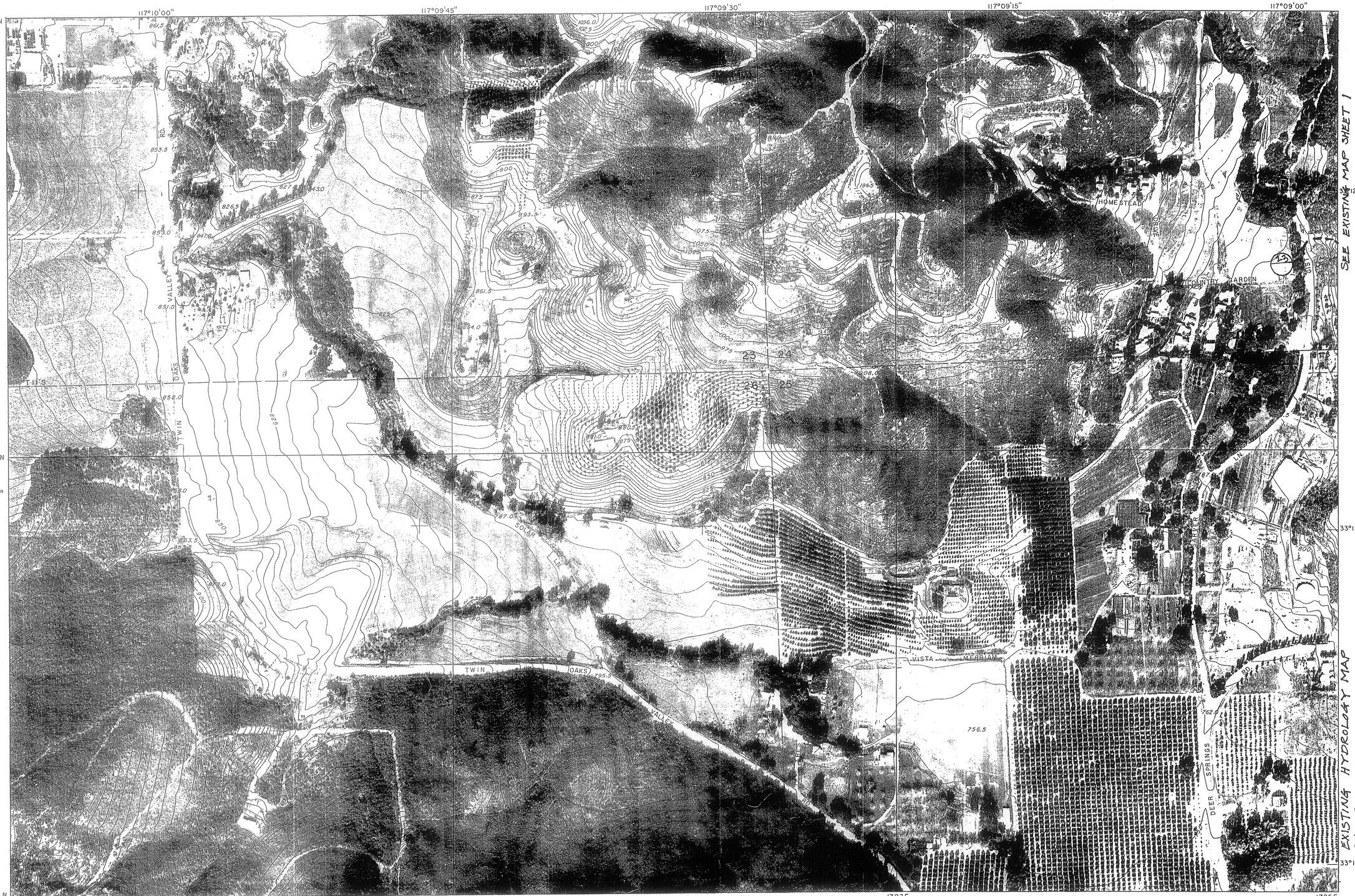
HORIZONTAL CONTROL IS BASED ON NORTH AMERICAN 1927 DATUM.

LAND LINES SHOWN ARE APPROXIMATE.

TOPOGRAPHY COMPILED BY PHOTO-GRAMMETRIC METHODS FROM PHOTOGRAPHY DATED 1-3-75 BY

INLAND AERIAL SURVEYS, INC.
5826 Magnolia Avenue
Riverside, California 92506

ORTHOPHOTO IMAGE PREPARED FROM PHOTOGRAPHY DATED 1-3-75 BY CALIFORNIA AERO TOPO, INC.



SEE EXISTING HYDROLOGY MAP SHEET 1 OF 2

EXISTING HYDROLOGY MAP SHEET 2 OF 2

SCALE 1:2400

200 0 200 400 600 800 1000

CONTOUR INTERVAL 5 FEET

U.S.C. & G.S. SEA LEVEL DATUM OF 1929

TWO THOUSAND FOOT CALIFORNIA RECTANGULAR GRID (ZONE VI)
THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED
THE RECTANGULAR COORDINATE VALUES ARE SHOWN ON THE SOUTH AND WEST MARGINS
THE GEOGRAPHIC VALUES ARE SHOWN ON THE NORTH AND EAST MARGINS

INDEX TO ADJOINING SHEETS

378-1713	378-1719	378-1725
374-1713	374-1719	374-1725
370-1713	370-1719	370-1725

PIZZUTO PROPERTY

SAN DIEGO COUNTY
CALIFORNIA

EDITION OF 1975

SHEET 374-1719

PRECISION
OCT 15 1975
MICROFILMED

COUNTY OF SAN DIEGO

TOPOGRAPHIC SURVEY

-LEGEND-

- Horizontal Control Monument *Third Order*
- Vertical Control Monument *Second Order or Better*
- Horizontal Control Monument *Second Order or Better*
- Vertical Control Monument *Third Order*
- Horizontal Control Monument *Second Order or Better*
- Horizontal Control Monument & Bench Mark *Second Order or Better*
- Horizontal Control Monument *Third Order.*
- Horizontal Control Monument & Bench Mark *Third Order*
- Bench Mark *Second Order or Better*
- Vertical Control Monument *Third Order*
- 4 3 T10S / 9 10 T11S — Found Section, Grant or Subdivision Corner.
- Photograph, Nadir Point
- Geographic Tick

BOUNDARIES IN ORDER OF PRECEDENCE

- .025" National
- Name .025" / Name County
- .015 City (*Use at Border with County*)
- Name within Bdry .015" Reservation
- Name within Bdry. .015" National, State or County Park
- Name within Bdry. .015" Land Grant
- T2S / T3S .015" Township, Range, Section or Subdivision (*Name of Subdivision within Bdry.*)

PREPARED UNDER THE DIRECTION OF THE COUNTY ENGINEER OF THE COUNTY OF SAN DIEGO, CALIFORNIA.

MAP CONTROL DATA FURNISHED BY THE COUNTY OF SAN DIEGO.

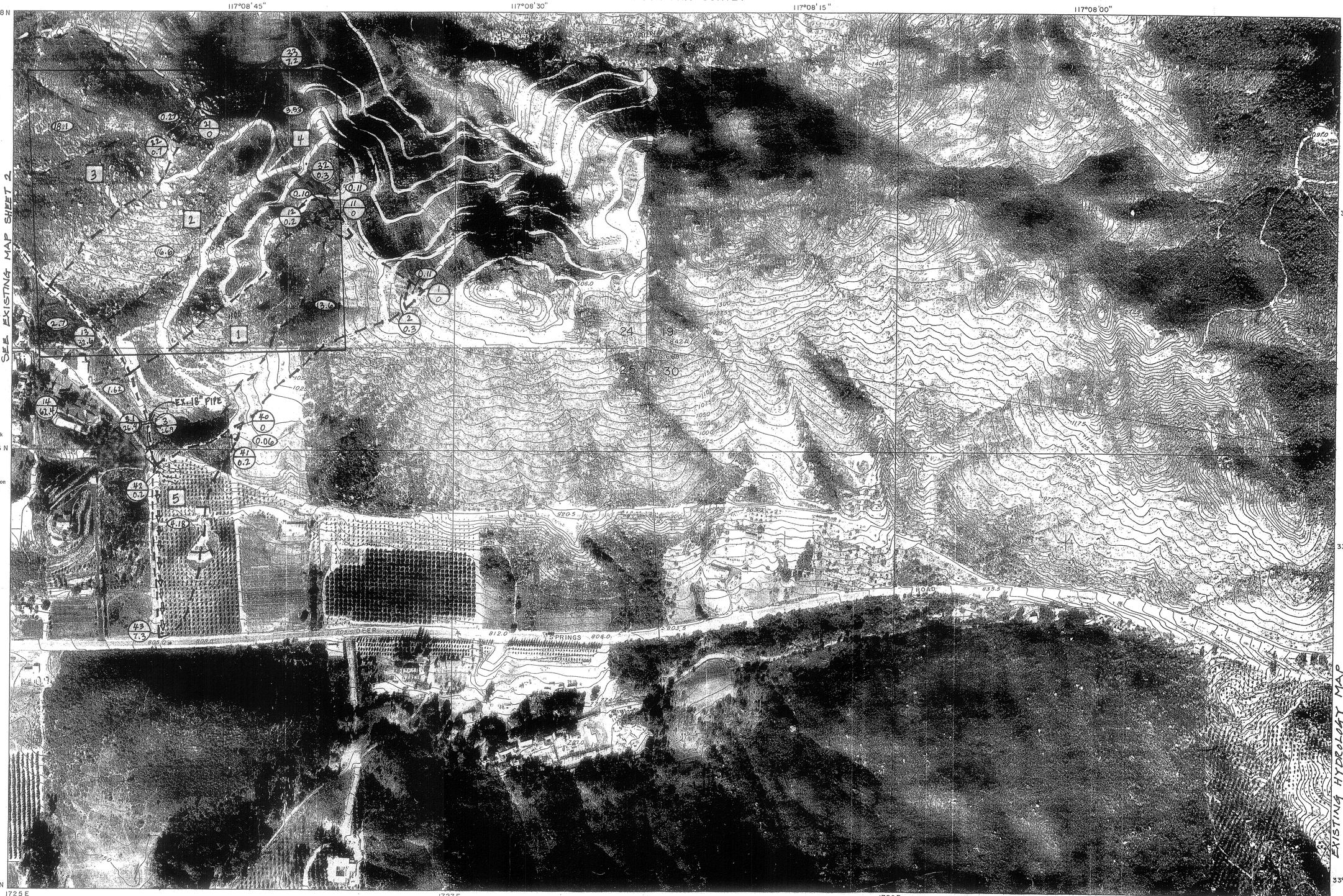
HORIZONTAL CONTROL IS BASED ON NORTH AMERICAN 1927 DATUM.

LAND LINES SHOWN ARE APPROXIMATE.

TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY DATED 1-3-75 BY

INLAND AERIAL SURVEYS, INC.
5826 Magnolia Avenue
Riverside, California 92506

ORTHOPHOTO IMAGE PREPARED FROM PHOTOGRAPHY DATED 1-3-75 BY CALIFORNIA AERO TOPO, INC.



LEGEND

- 1 / 0.3 — NODE / Q (CFS)
- 0.3 — AREA (ACRE)
- 1 — BASIN #
- → — FLOW PATH

SCALE 1:2400

200 0 200 400 600 800 1000

CONTOUR INTERVAL 5 FEET

U. S. C. & G. S. SEA LEVEL DATUM OF 1929

TWO THOUSAND FOOT CALIFORNIA RECTANGULAR GRID (ZONE VI)

THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED

THE RECTANGULAR COORDINATE VALUES ARE SHOWN ON THE SOUTH AND WEST MARGINS

THE GEOGRAPHIC VALUES ARE SHOWN ON THE NORTH AND EAST MARGINS

INDEX TO ADJOINING SHEETS

378-1719	378-1725	378-1731
374-1719	374-1725	374-1731
370-1719	370-1725	370-1731

PIZZUTO PROPERTY

SAN DIEGO COUNTY
CALIFORNIA

EDITION OF 1975

SHEET 374-1725

PRECISION
OCT 15 1975
MICROFILMED

TENTATIVE PARCEL MAP NO. 20846 RPL #3

LEGEND:

- EXISTING FIRE HYDRANT
- EXISTING CSP
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED SEWER MANHOLE
- 9 — PROPOSED LOT NUMBER
- P.E. 815 — PROPOSED PAD ELEVATION
- PROP. SLOPE (1.5:1 MAX)
- PROPOSED DAY LITE
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXISTING EASEMENT
- 800 — EXISTING CONTOURS
- 800 — PROPOSED CONTOURS
- OPEN SPACE
- PROPERTY LINE
- PROPOSED BROW DITCH

AERIAL TOPOGRAPHY

EXISTING TOPOGRAPHY PROVIDED BY: FUSCOE ENGINEERING
6390 GREENWICH DR. STE 170
SAN DIEGO, CA. 92122
(858) 554–1500

EARTHWORK QUANTITIES

CUT: 26,000 CY±
FILL: 32,000 CY±
IMPORT: 6,000 CY±

ASSESSOR'S PARCEL NUMBERS

178–100–07
TAX RATE CODE: 92069

LEGAL DESCRIPTION

THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 11 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND FILED IN THE DISTRICT LAND OFFICE, APRIL 24, 1886.

SOLAR ACCESS STATEMENT

THIS IS A SOLAR SUBDIVISION AS REQUIRED BY SECTION 81.401 (n) OF THE SUBDIVISION ORDINANCE. ALL LOTS HAVE AT LEAST 100 SQUARE FEET OF UNOBSTRUCTED ACCESS TO SUNLIGHT ON THE BUILDABLE PORTION OF THE LOT.

ACCESS

ACCESS IS FROM DEER SPRINGS ROAD, WHICH IS A PUBLICLY MAINTAINED ROAD, TO DEER SPRING PLACE, WHICH IS A PRIVATELY MAINTAINED ROAD, TO THE BOUNDARY OF THE SUBJECT PROPERTY.

HEALTH DEPT. CERTIFICATE

VPM 116

ALL PARCELS SHALL HAVE A LAYOUT OF THE SEWAGE DISPOSAL SYSTEM, PROPOSED STRUCTURES, CUTS AND FILLS APPROVED BY THE SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH PRIOR TO THE APPROVAL OF THE BUILDING PERMIT AND/OR ISSUANCE OF A SEPTIC TANK PERMIT. AN ADDITIONAL EXPANSION AREA OF 100% OF THE INITIAL TILE AREA SHALL BE PROVIDED BY GRAVITY FLOW FOR THE POTENTIAL EXPANSION IN THE EVENT OF FAILURE.

THIS CERTIFICATION DOES NOT IMPLY ALL CONDITIONS PURSUANT TO THE RESOURCE PROTECTION ORDINANCE AND THE GROUNDWATER ORDINANCE HAVE BEEN MET. THE DEPARTMENT OF PLANNING AND LAND USE SHOULD BE CONSULTED REGARDING THE APPLICATION OF THESE ORDINANCES RELATIVE TO THIS PROJECT. ANY RESULTANT CHANGES TO THE SEPTIC SYSTEM DESIGN(S) MUST BE RE–EVALUATED BY THE DEPARTMENT OF ENVIRONMENTAL HEALTH.

EACH PARCEL IS APPROVED FOR A STANDARD SEPTIC TANK CONNECTED TO ___4___ FEET OF TILE DRAIN FIELD TO SERVE A THREE BEDROOM DWELLING: PROVIDED THE ORIGINAL SOIL IS NOT DISTURBED IN ANY WAY, SUCH AS CUTTING, FILLING OR RIPPING. THIS DOES NOT CONSTITUTE APPROVAL FOR COMMERCIAL ESTABLISHMENTS.

DATA AND RECOMMENDATION IN THE NAME OF SYLVIA PIZZUTO
BY: RALPH MALCOM VINJE RGE#863

PARCEL #	LEACH LINE FOOTAGE	TRENCH DEPTH FOOTAGE	ROCK UNDER PIPE
1	380	3	1
2	240	3	1
3	460	3 & 5	1 & 3

GARY ERBECK, DIRECTOR DEPARTMENT OF ENVIRONMENTAL HEALTH
BY: PAUL NICHOLS REHS DATE: 06–08–2004

NOTE: PARCELS 1 AND 2 HAVE LAYOUT APPROVAL FOR 5 BEDROOM. PARCEL 3 HAS LAYOUT APPROVED FOR 4 BEDROOM AND THE SYSTEM IS A COMBINATION OF 3 FOOT TRENCH AND 5 FOOT TRENCH (STEEP SLOPE)

EASEMENT NOTES

(4) AN EASEMENT TO THE SAN DIEGO COUNTY WATER AUTHORITY FOR PIPELINE PURPOSES DATED: MAY 27, 1964 AS FP NO. 1964–95321 OF O.R.

(5) AN EASEMENT FOR A PIPELINE DATED: DECEMBER 14, 1965 AS FP NO. 1965–225593 OF O.R.

(6) AN EASEMENT FOR ROAD AND UTILITY PURPOSES DATED: DECEMBER 23, 1968 AS FP NO. 1968–224362 OF O.R.

(9) AN EASEMENT TO SAN DIEGO GAS & ELECTRIC FOR UTILITY PURPOSES DATED: FEBRUARY 3, 1975 AS FILE NO. 1975–024453 OF O.R.

(10) AN EASEMENT TO SAN DIEGO GAS & ELECTRIC FOR UTILITY PURPOSES DATED: NOVEMBER 25, 1975 AS FP NO. 1975–331281 OF O.R.

(11) AN EASEMENT TO THE SAN MARCOS COUNTY WATER DISTRICT FOR PIPELINE PURPOSES DATED: APRIL 19, 1979 AS FP NO. 1979–160549 OF O.R.

(13) AN EASEMENT TO SAN DIEGO GAS & ELECTRIC FOR UTILITY PURPOSES DATED: AUGUST 22, 1979 AS FP NO. 1979–352033 OF O.R.

(14) AN EASEMENT TO PACIFIC TELEPHONE AND TELEGRAPH COMPANY FOR UTILITY PURPOSES DATED: NOVEMBER 16, 1979 AS FP NO. 1979–485747 OF O.R.

(15) AN EASEMENT TO THE SAN MARCOS COUNTY WATER DISTRICT FOR PIPELINE PURPOSES DATED: SEPTEMBER 5, 1985 AS FP NO. 1985–325569 OF O.R.

(16) AN EASEMENT TO SAN MARCOS COUNTY WATER DISTRICT FOR PIPELINE PURPOSES DATED: OCTOBER 30, 1986 AS FP NO. 1986–493245 OF O.R.

GENERAL NOTES:

1. ALL INTERNAL STREETS WILL BE PRIVATE (DEER SPRINGS PLACE)
2. GRADING AND IMPROVEMENTS SHALL BE IN ACCORDANCE WITH COUNTY STANDARDS.
3. EASEMENTS OF RECORD NOT SHOWN HEREON SHALL BE HONORED, ABANDONED AND/OR RELOCATED TO THE SATISFACTION OF ALL INTERESTED PARTIES, AND PUBLIC UTILITY EASEMENTS NECESSARY TO SERVE THIS PROJECT WILL BE COORDINATED WITH SERVING UTILITY COMPANIES.
4. LOT DIMENSIONS AND AREAS SHOWN HEREON ARE APPROXIMATE. THE DIMENSIONS MAY BE ADJUSTED TO BE CONSISTENT WITH THE FINAL MAP.
5. ZONING REQUIREMENTS:

	APN #'S 178–100–07
USE REGULATIONS:	A70
NEIGHBORHOOD REGS	–
ANIMAL REGS	L
DENSITY	.25
LOT SIZE (AC)	4 ACRES
BUILDING TYPE	C
MAX. FLOOR AREA	–
FLOOR AREA RATIO	–
HEIGHT	G
COVERAGE	–
SETBACK	C
OPEN SPACE	–
SPECIAL AREA REGS	–

TOTAL LOTS AND AREA:

ACREAGE: 41.14 AC GROSS
ACREAGE: 36.88 AC NET
LOTS: (RESIDENTIAL) 3
MIN. LOT SIZE: 8 AC
NO. DWELLING UNITS: 3
GENERAL PLAN: 18 MULTIPLE RURAL USE
REGIONAL CATEGORY: E.D.A.
COMMUNITY PLAN: NORTH COUNTY METRO

UTILITIES:

SEWER:	PRIVATE SEPTIC SYSTEMS
WATER:	VALLECITOS WATER DISTRICT
SCHOOLS:	SAN MARCOS UNIFIED SCHOOL DISTRICT
FIRE:	DEER SPRINGS FIRE PROTECTION DISTRICT
TELEPHONE:	AT&T
GAS & ELECTRIC:	SAN DIEGO GAS & ELECTRIC CO.
STREET LIGHTING:	NO STREET LIGHTS ARE PROPOSED

6. OPEN SPACE (STEEP SLOPES)
   PARCEL 1 = 7.81 ACRES
   PARCEL 2 = 2.89 ACRES
   PARCEL 3 = 8.42 ACRES
   TOTAL = 19.12
7. "THIS PLAN IS PROVIDED TO ALLOW FOR FULL ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON, AND AGREES TO OBTAIN VALID GRADING PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY."

OWNER/SUBDIVIDER:

WE HEREBY CERTIFY THAT WE ARE THE RECORD OWNERS, AS SHOWN ON THE LATEST EQUALIZED COUNTY ASSESSMENT, OF THE PROPERTY SHOWN ON THE TENTATIVE PARCEL MAP. ALL OF OUR CONTIGUOUS OWNERSHIP WITHIN AND BEYOND THE BOUNDARIES OF THE TENTATIVE PARCEL MAP ARE SHOWN. THE BASIS OF CREATION OF THE LOTS IN OUR OWNERSHIP (E.G., PARCEL MAP, FINAL MAP, CERTIFICATE OF COMPLIANCE, RECORDED DEED BEFORE 2/1/72) IS INDICATED ON THE TENTATIVE PARCEL MAP. WE UNDERSTAND THAT PROPERTY IS CONSIDERED AS CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, STREETS, UTILITY EASEMENTS OR RAILROAD RIGHT–OF–WAY. "FREEWAY" AS DEFINED IN SECTION 23.5 OF THE STREETS AND HIGHWAY CODE, SHALL NOT BE CONSIDERED AS ROADS OR STREETS.

WE FURTHER CERTIFY THAT WE WILL NOT, BY THIS APPLICATION, CREATE OR CAUSE TO BE CREATED, OR WILL NOT HAVE PARTICIPATED IN THE CREATION OF MORE THAN FOUR PARCELS ON CONTIGUOUS PROPERTY UNLESS SUCH CONTIGUOUS PARCELS WERE CREATED BY MAJOR SUBDIVISION. FOR PURPOSES OF THIS CERTIFICATION, THE TERM "PARTICIPATED" MEANS HAVING COOPERATED WITH OR ACTED IN A PLANNING, COORDINATING OR DECISION–MAKING CAPACITY IN ANY FORMAL OR INFORMAL ASSOCIATION OR PARTNERSHIP FOR THE PURPOSE OF DIVIDING REAL PROPERTY.

CARL AND SILVIA PIZZUTO
773 HILLSBORO WAY
SAN MARCOS, CA. 92069
(760) 518–6910

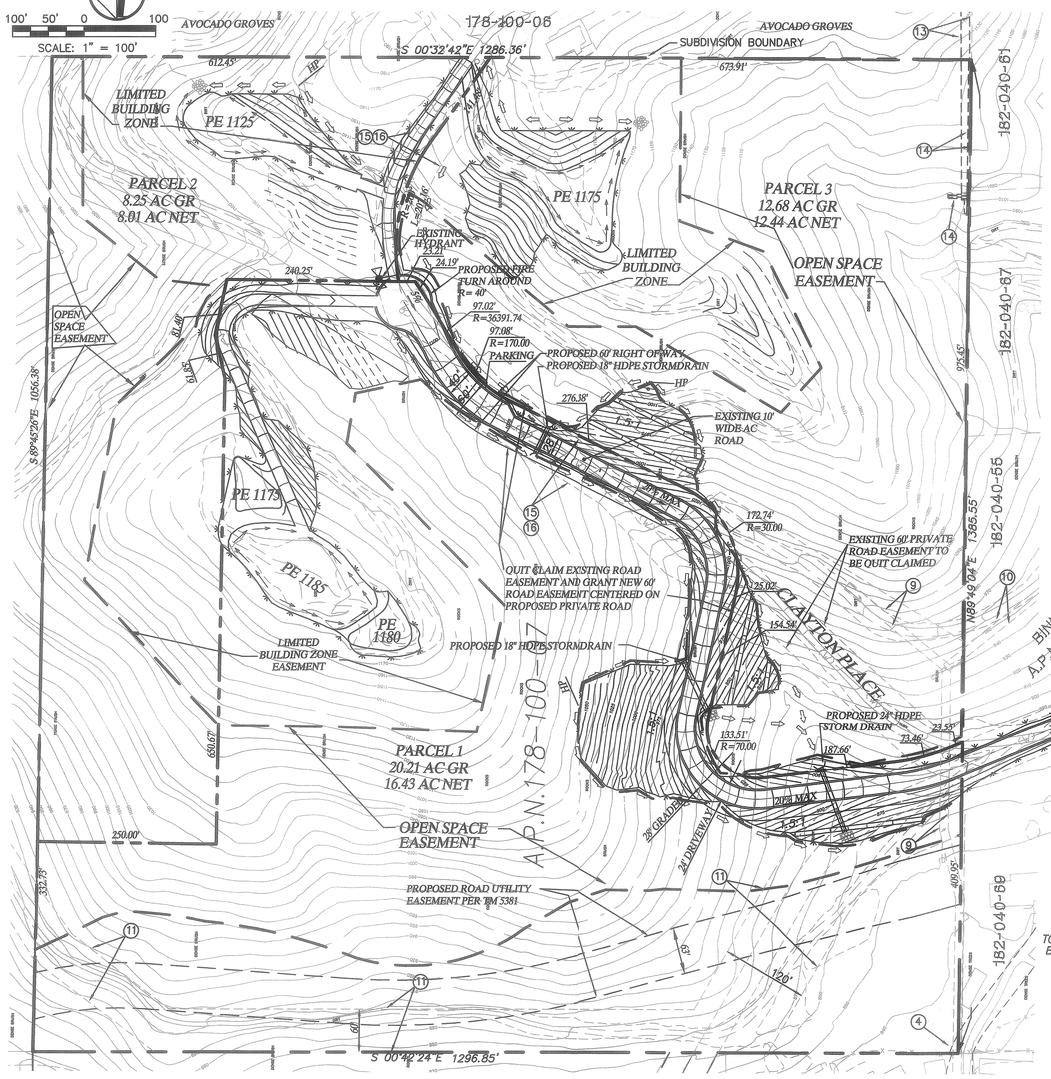
OWNER OWNER

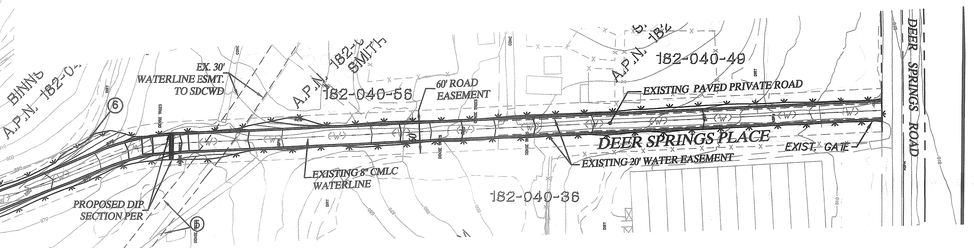
ENGINEER OF WORK:

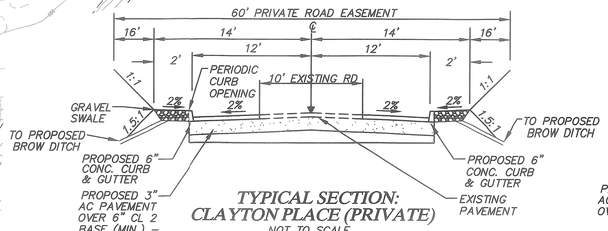
bHA, Inc.
land planning, civil engineering, surveying
5115 AVENIDA ENCINAS
SUITE "L"
CARLSBAD, CA. 92008–4387
(760) 931–8700

REGISTERED PROFESSIONAL ENGINEER — RONALD L. HOLLOWAY — NO. 29271 — EXP. 3–31–07 — CIVIL — STATE OF CALIFORNIA

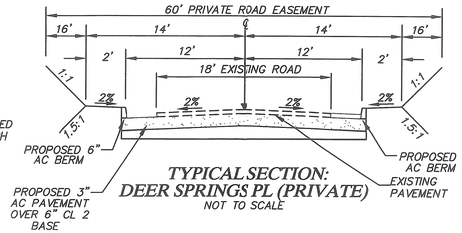
RONALD L. HOLLOWAY RCE 29271 EXP. 3–31–07 DATE



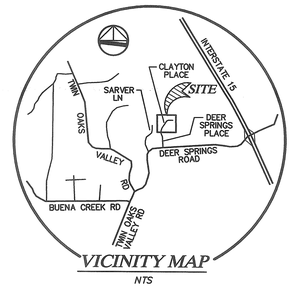




TYPICAL SECTION: CLAYTON PLACE (PRIVATE)
NOT TO SCALE



TYPICAL SECTION: DEER SPRINGS PL (PRIVATE)
NOT TO SCALE



VICINITY MAP
NTS

REVISIONS			
No.	Description	Approved by	Date

SHEET 1 OF 1

K:\Land Projects 3\555–0915–400\dwg\TPM\555–0915–TM01.dwg 9/13/2006 4:02:00 PM PST

TENTATIVE PARCEL MAP NO. 20846 RPL #3
PRELIMINARY GRADING PLAN

LEGEND:

- EXISTING FIRE HYDRANT
- EXISTING CSP
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED SEWER MANHOLE
- 9 — PROPOSED LOT NUMBER
- P.E. 815 — PROPOSED PAD ELEVATION
- PROP. SLOPE (1.5:1 MAX)
- PROPOSED DAY LITE
- W — PROPOSED WATER LINE
- (W) — EXISTING WATER LINE
- EXISTING EASEMENT
- 800 — EXISTING CONTOURS
- 800 — PROPOSED CONTOURS
- OPEN SPACE
- PROPERTY LINE
- PROPOSED BROW DITCH

AERIAL TOPOGRAPHY

EXISTING TOPOGRAPHY PROVIDED BY: FUSCOE ENGINEERING
6390 GREENWICH DR. STE 170
SAN DIEGO, CA. 92122
(858) 554-1500

EARTHWORK QUANTITIES

CUT: 26,000 CY±
FILL: 32,000 CY±
IMPORT: 6,000 CY±

ASSESSOR'S PARCEL NUMBERS

178-100-07
TAX RATE CODE: 92069

LEGAL DESCRIPTION

THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 11 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND FILED IN THE DISTRICT LAND OFFICE, APRIL 24, 1886.

SOLAR ACCESS STATEMENT

THIS IS A SOLAR SUBDIVISION AS REQUIRED BY SECTION 81.401 (n) OF THE SUBDIVISION ORDINANCE. ALL LOTS HAVE AT LEAST 100 SQUARE FEET OF UNOBSTRUCTED ACCESS TO SUNLIGHT ON THE BUILDABLE PORTION OF THE LOT.

ACCESS

ACCESS IS FROM DEER SPRINGS ROAD, WHICH IS A PUBLICLY MAINTAINED ROAD, TO DEER SPRING PLACE, WHICH IS A PRIVATELY MAINTAINED ROAD, TO THE BOUNDARY OF THE SUBJECT PROPERTY.

HEALTH DEPT. CERTIFICATE

VPM 116

ALL PARCELS SHALL HAVE A LAYOUT OF THE SEWAGE DISPOSAL SYSTEM, PROPOSED STRUCTURES, CUTS AND FILLS APPROVED BY THE SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH PRIOR TO THE APPROVAL OF THE BUILDING PERMIT AND/OR ISSUANCE OF A SEPTIC TANK PERMIT. AN ADDITIONAL EXPANSION AREA OF 100% OF THE INITIAL TILE AREA SHALL BE PROVIDED BY GRAVITY FLOW FOR THE POTENTIAL EXPANSION IN THE EVENT OF FAILURE.

THIS CERTIFICATION DOES NOT IMPLY ALL CONDITIONS PURSUANT TO THE RESOURCE PROTECTION ORDINANCE AND THE GROUNDWATER ORDINANCE HAVE BEEN MET. THE DEPARTMENT OF PLANNING AND LAND USE SHOULD BE CONSULTED REGARDING THE APPLICATION OF THESE ORDINANCES RELATIVE TO THIS PROJECT. ANY RESULTANT CHANGES TO THE SEPTIC SYSTEM DESIGN(S) MUST BE RE-EVALUATED BY THE DEPARTMENT OF ENVIRONMENTAL HEALTH.

EACH PARCEL IS APPROVED FOR A STANDARD SEPTIC TANK CONNECTED TO __*__ FEET OF TILE DRAIN FIELD TO SERVE A THREE BEDROOM DWELLING: PROVIDED THE ORIGINAL SOIL IS NOT DISTURBED IN ANY WAY, SUCH AS CUTTING, FILLING OR RIPPING. THIS DOES NOT CONSTITUTE APPROVAL FOR COMMERCIAL ESTABLISHMENTS.

DATA AND RECOMMENDATION IN THE NAME OF SYLVIA PIZZUTO
BY: RALPH MALCOM VINJE RGE#863

PARCEL #	LEACH LINE FOOTAGE	TRENCH DEPTH FOOTAGE	ROCK UNDER PIPE
1	380	3	1
2	240	3	1
3	460	3 & 5	1 & 3

GARY ERBECK, DIRECTOR DEPARTMENT OF ENVIRONMENTAL HEALTH
BY: PAUL NICHOLS REHS DATE: 06-08-2004

NOTE: PARCELS 1 AND 2 HAVE LAYOUT APPROVAL FOR 5 BEDROOM. PARCEL 3 HAS LAYOUT APPROVED FOR 4 BEDROOM AND THE SYSTEM IS A COMBINATION OF 3 FOOT TRENCH AND 5 FOOT TRENCH (STEEP SLOPE)

EASEMENT NOTES

(4) AN EASEMENT TO THE SAN DIEGO COUNTY WATER AUTHORITY FOR PIPELINE PURPOSES DATED: MAY 27, 1964 AS FP NO. 1964-95321 OF O.R.

(5) AN EASEMENT FOR A PIPELINE DATED: DECEMBER 14, 1965 AS FP NO. 1965-225593 OF O.R.

(6) AN EASEMENT FOR ROAD AND UTILITY PURPOSES DATED: DECEMBER 23, 1968 AS FP NO. 1968-224362 OF O.R.

(9) AN EASEMENT TO SAN DIEGO GAS & ELECTRIC FOR UTILITY PURPOSES DATED: FEBRUARY 3, 1975 AS FILE NO. 1975-024453 OF O.R.

(10) AN EASEMENT TO SAN DIEGO GAS & ELECTRIC FOR UTILITY PURPOSES DATED: NOVEMBER 25, 1975 AS FP NO. 1975-331281 OF O.R.

(11) AN EASEMENT TO THE SAN MARCOS COUNTY WATER DISTRICT FOR PIPELINE PURPOSES DATED: APRIL 19, 1979 AS FP NO. 1979-160549 OF O.R.

(13) AN EASEMENT TO SAN DIEGO GAS & ELECTRIC FOR UTILITY PURPOSES DATED: AUGUST 22, 1979 AS FP NO. 1979-352033 OF O.R.

(14) AN EASEMENT TO PACIFIC TELEPHONE AND TELEGRAPH COMPANY FOR UTILITY PURPOSES DATED: NOVEMBER 16, 1979 AS FP NO. 1979-485747 OF O.R.

(15) AN EASEMENT TO THE SAN MARCOS COUNTY WATER DISTRICT FOR PIPELINE PURPOSES DATED: SEPTEMBER 5, 1985 AS FP NO. 1985-325569 OF O.R.

(16) AN EASEMENT TO SAN MARCOS COUNTY WATER DISTRICT FOR PIPELINE PURPOSES DATED: OCTOBER 30, 1986 AS FP NO. 1986-493245 OF O.R.

GENERAL NOTES:

1. ALL INTERNAL STREETS WILL BE PRIVATE (DEER SPRINGS PLACE)
2. GRADING AND IMPROVEMENTS SHALL BE IN ACCORDANCE WITH COUNTY STANDARDS.
3. EASEMENTS OF RECORD NOT SHOWN HEREON SHALL BE HONORED, ABANDONED AND/OR RELOCATED TO THE SATISFACTION OF ALL INTERESTED PARTIES, AND PUBLIC UTILITY EASEMENTS NECESSARY TO SERVE THIS PROJECT WILL BE COORDINATED WITH SERVING UTILITY COMPANIES.
4. LOT DIMENSIONS AND AREAS SHOWN HEREON ARE APPROXIMATE. THE DIMENSIONS MAY BE ADJUSTED TO BE CONSISTENT WITH THE FINAL MAP.
5. ZONING REQUIREMENTS:

	APN #'S 178-100-07
USE REGULATIONS:	A70
NEIGHBORHOOD REGS	–
ANIMAL REGS	L
DENSITY	.25
LOT SIZE (AC)	4 ACRES
BUILDING TYPE	C
MAX. FLOOR AREA	–
FLOOR AREA RATIO	–
HEIGHT	G
COVERAGE	–
SETBACK	C
OPEN SPACE	–
SPECIAL AREA REGS	–

TOTAL LOTS AND AREA:
ACREAGE: 41.14 AC GROSS
ACREAGE: 36.88 AC NET
LOTS: (RESIDENTIAL) 3
MIN. LOT SIZE: 8 AC
NO. DWELLING UNITS: 3
GENERAL PLAN: 18 MULTIPLE RURAL USE
REGIONAL CATEGORY: E.D.A.
COMMUNITY PLAN: NORTH COUNTY METRO

UTILITIES:

SEWER:	PRIVATE SEPTIC SYSTEMS
WATER:	VALLECITOS WATER DISTRICT
SCHOOLS:	SAN MARCOS UNIFIED SCHOOL DISTRICT
FIRE:	DEER SPRINGS FIRE PROTECTION DISTRICT
TELEPHONE:	AT&T
GAS & ELECTRIC:	SAN DIEGO GAS & ELECTRIC CO.
STREET LIGHTING:	NO STREET LIGHTS ARE PROPOSED

6. OPEN SPACE (STEEP SLOPES)
PARCEL 1 = 7.81 ACRES
PARCEL 2 = 2.89 ACRES
PARCEL 3 = 8.42 ACRES
TOTAL = 19.12
7. "THIS PLAN IS PROVIDED TO ALLOW FOR FULL ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON, AND AGREES TO OBTAIN VALID GRADING PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY."

OWNER/SUBDIVIDER:

WE HEREBY CERTIFY THAT WE ARE THE RECORD OWNERS, AS SHOWN ON THE LATEST EQUALIZED COUNTY ASSESSMENT, OF THE PROPERTY SHOWN ON THE TENTATIVE PARCEL MAP. ALL OF OUR CONTIGUOUS OWNERSHIP WITHIN AND BEYOND THE BOUNDARIES OF THE TENTATIVE PARCEL MAP ARE SHOWN. THE BASIS OF CREATION OF THE LOTS IN OUR OWNERSHIP (E.G., PARCEL MAP, FINAL MAP, CERTIFICATE OF COMPLIANCE, RECORDED DEED BEFORE 2/1/72) IS INDICATED ON THE TENTATIVE PARCEL MAP. WE UNDERSTAND THAT PROPERTY IS CONSIDERED AS CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, STREETS, UTILITY EASEMENTS OR RAILROAD RIGHT-OF-WAY. "FREEWAY" AS DEFINED IN SECTION 23.5 OF THE STREETS AND HIGHWAY CODE, SHALL NOT BE CONSIDERED AS ROADS OR STREETS.

WE FURTHER CERTIFY THAT WE WILL NOT, BY THIS APPLICATION, CREATE OR CAUSE TO BE CREATED, OR WILL NOT HAVE PARTICIPATED IN THE CREATION OF MORE THAN FOUR PARCELS ON CONTIGUOUS PROPERTY UNLESS SUCH CONTIGUOUS PARCELS WERE CREATED BY MAJOR SUBDIVISION. FOR PURPOSES OF THIS CERTIFICATION, THE TERM "PARTICIPATED" MEANS HAVING COOPERATED WITH OR ACTED IN A PLANNING, COORDINATING OR DECISION-MAKING CAPACITY IN ANY FORMAL OR INFORMAL ASSOCIATION OR PARTNERSHIP FOR THE PURPOSE OF DIVIDING REAL PROPERTY.

CARL AND SILVIA PIZZUTO
773 HILLSBORO WAY
SAN MARCOS, CA. 92069
(760) 518-6910

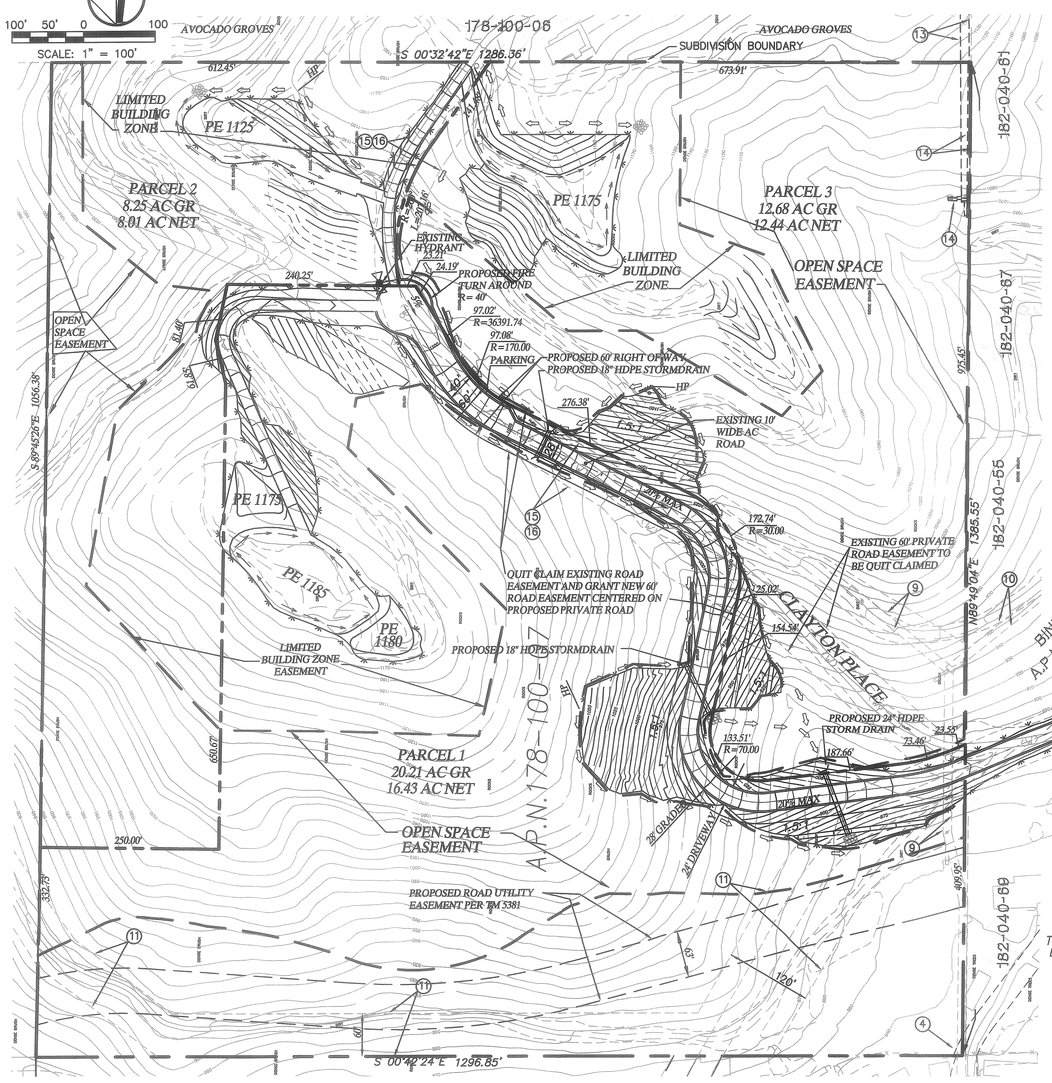
OWNER OWNER

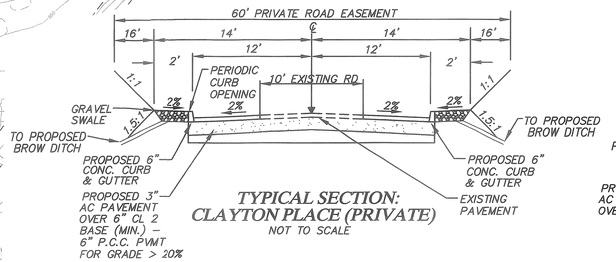
ENGINEER OF WORK:

bHA, Inc.
land planning, civil engineering, surveying
5115 AVENIDA ENCINAS
SUITE "L"
CARLSBAD, CA. 92008-4387
(760) 931-8700

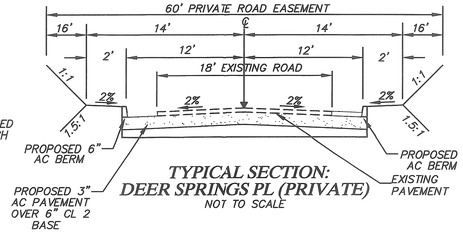
REGISTERED PROFESSIONAL ENGINEER — RONALD L. HOLLOWAY NO. 29271 EXP. 3-31-07 — CIVIL — STATE OF CALIFORNIA

RONALD L. HOLLOWAY RCE 29271 EXP. 3-31-07 DATE

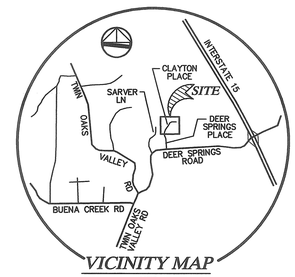




TYPICAL SECTION: CLAYTON PLACE (PRIVATE)
NOT TO SCALE



TYPICAL SECTION: DEER SPRINGS PL (PRIVATE)
NOT TO SCALE



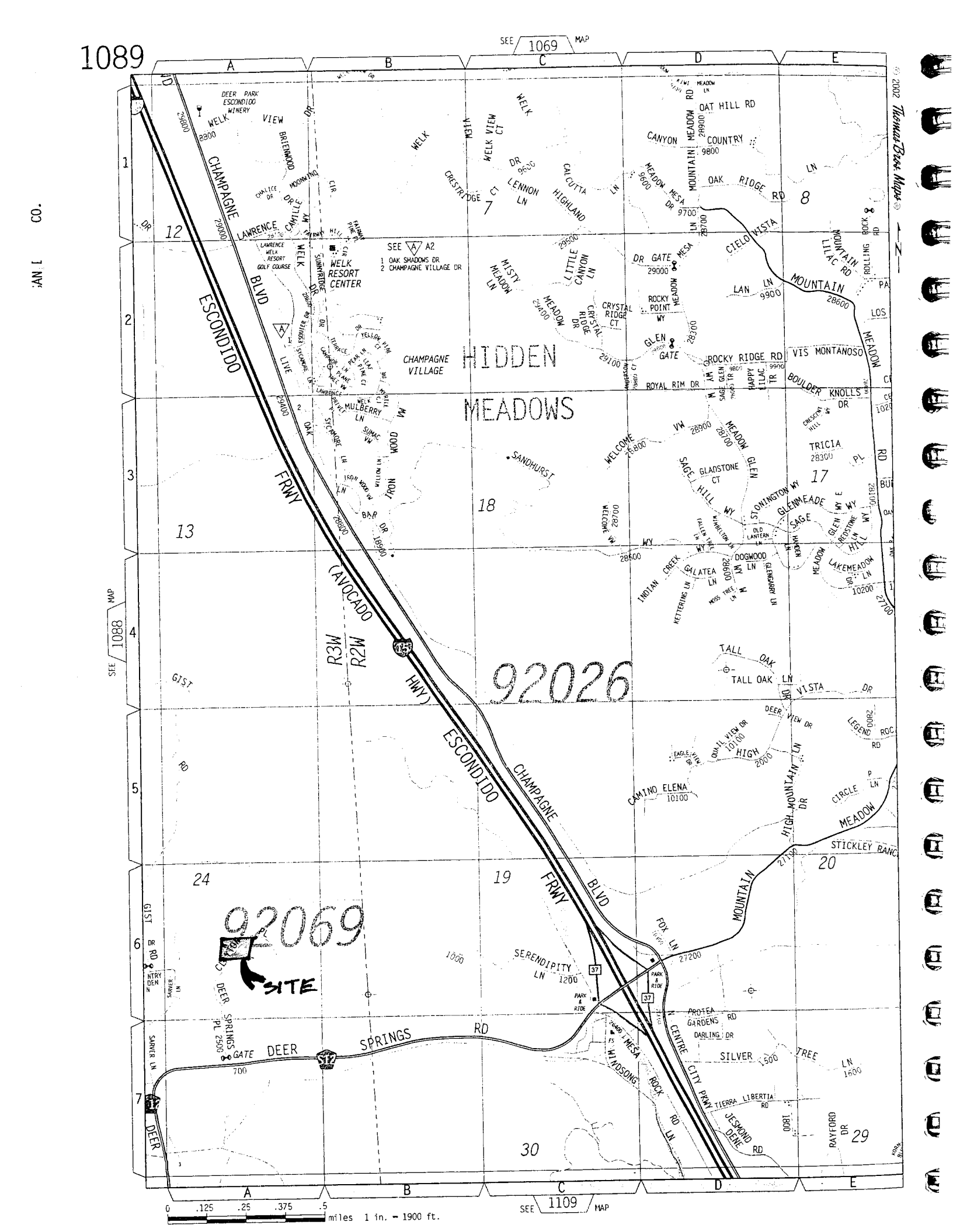
VICINITY MAP
NTS

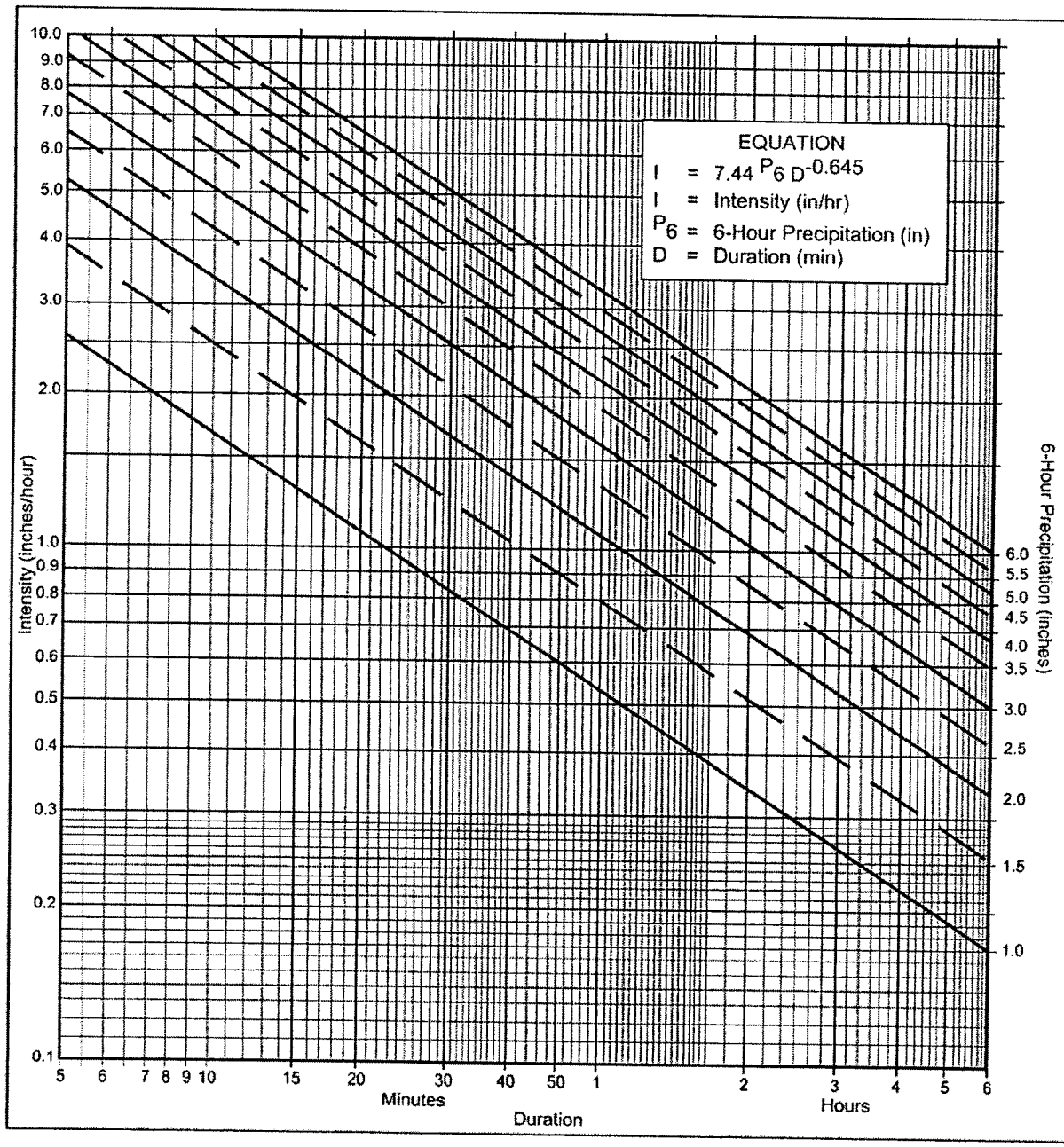
REVISIONS			
No.	Description	Approved by	Date

SHEET 1 OF 1

K:\Land Projects 3\555-0915-400\dwg\prelim-gr-pln\555-0915-PGP.dwg 9/13/2006 7:02:37 AM PS

IV. REFERENCES


1089
SEE 1069 MAP
A
B
C
D
E
1
2
3
4
5
6
7
SEE 1088 MAP
SEE 1109 MAP
DEER PARK ESCONDIDO WINERY
WELK VIEW DR
BRIERWOOD
MOONWIND CIR
CHALICE DR
CAMILLE WY
LAWRENCE WELK RESORT GOLF COURSE
WELK RESORT CENTER
SEE A2
1 OAK SHADOWS DR
2 CHAMPAGNE VILLAGE DR
CHAMPAGNE BLVD
ESCONDIDO FRWY
CHAMPAGNE VILLAGE
HIDDEN MEADOWS
SANDHURST
WELK VIEW CT
CRESTRIDGE CT
LENNON LN
CALCUTTA LN
HIGHLAND
OAT HILL RD
CANYON MEADOW
COUNTRY
MOUNTAIN
OAK RIDGE RD
MEADOW MESA DR
MISTY MEADOW LN
LITTLE CANYON LN
CRYSTAL RIDGE DR
CRYSTAL RIDGE CT
ROCKY POINT WY
DR GATE MESA
CIELO VISTA
MOUNTAIN LILAC RD
ROLLING ROCK RD
GLEN GATE
ROCKY RIDGE RD
VIS MONTANOSO
ROYAL RIM DR
BOULDER KNOLLS DR
MULBERRY LN
SUMAC WY
SYCAMORE LN
IRON WOOD LN
BAR DR
WELCOME WY
MEADOW GLEN
SAGE HILL WY
GLADSTONE CT
TRICIA PL
STONINGTON WY
GLENMEADE WY
SAGE GLEN WY
OLD LANTERN LN
DOGWOOD LN
GALATEA LN
INDIAN CREEK
KETTERING LN
LAKEMEADOW LN
R3W
R2W
(AVOCADO HWY)
92026
TALL OAK LN
VISTA DR
DEER VIEW DR
QUAIL VIEW DR
EAGLE VIEW DR
HIGH MOUNTAIN DR
CAMINO ELENA
CIRCLE P LN
MEADOW
STICKLEY RANCH
92069
SITE
SERENDIPITY LN
FOX LN
PARK & RIDE
PROTEA GARDENS RD
DARLING DR
SILVER TREE LN
TIERRA LIBERTIA RD
JESMOND DENE RD
RAYFORD DR
MESA WINDSONG ROCK RD
DEER SPRINGS RD
GATE
SARVER LN
GIST DR
GIST RD
CENTRE CITY PKWY
15
67
52
37
0 .125 .25 .375 .5 miles 1 in. = 1900 ft.
© 2002 Thomas Bros. Maps
N



Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicaple to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency 100 year

(b) P_6 = 3.5 in., P_{24} = 6.7, $\frac{P_6}{P_{24}}$ = 52 %(2)

(c) Adjusted P_6(2) = 3.5 in.

(d) t_x = _____ min.

(e) I = _____ in./hr.

Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6 / Duration	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

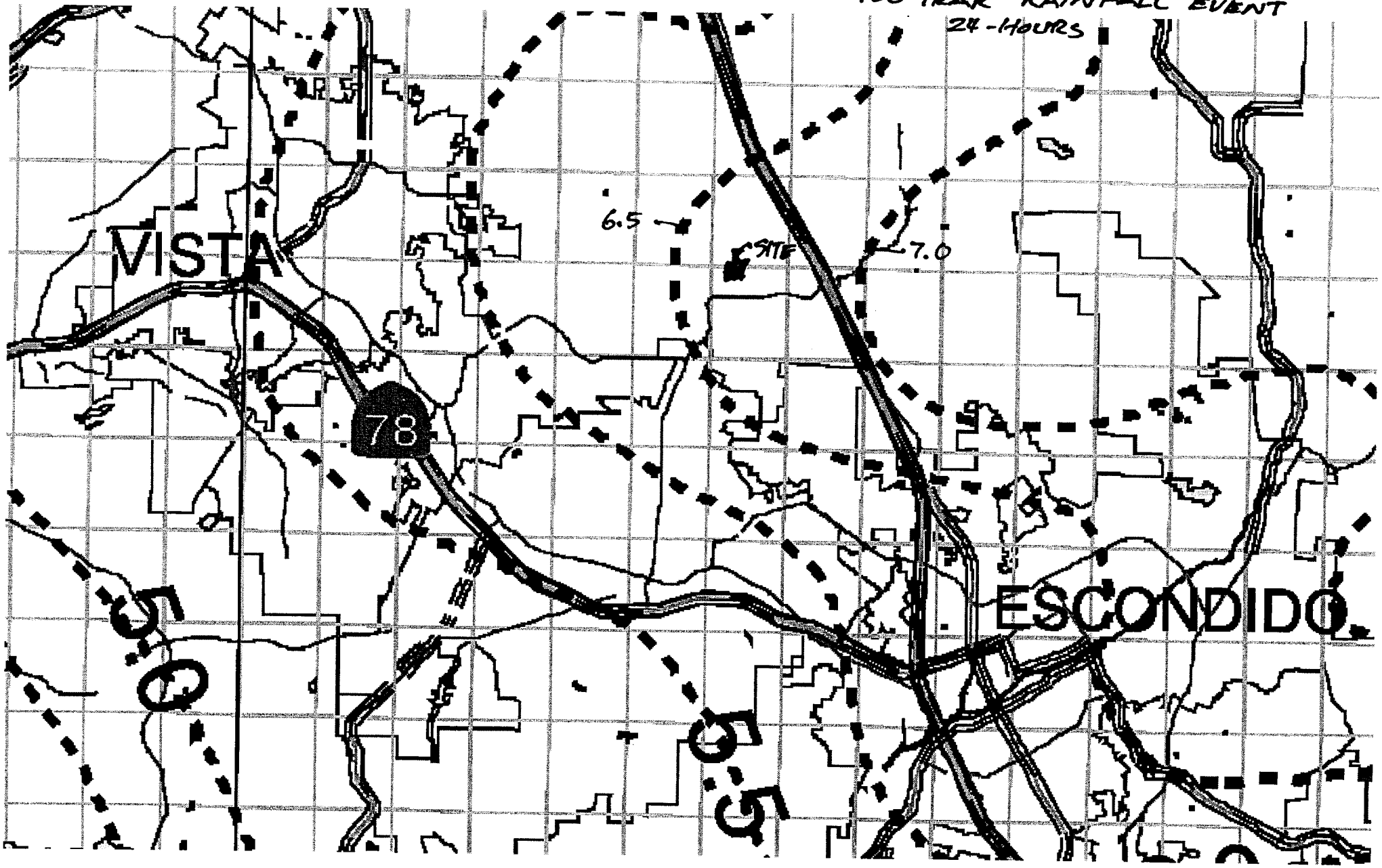
FIGURE 3-1

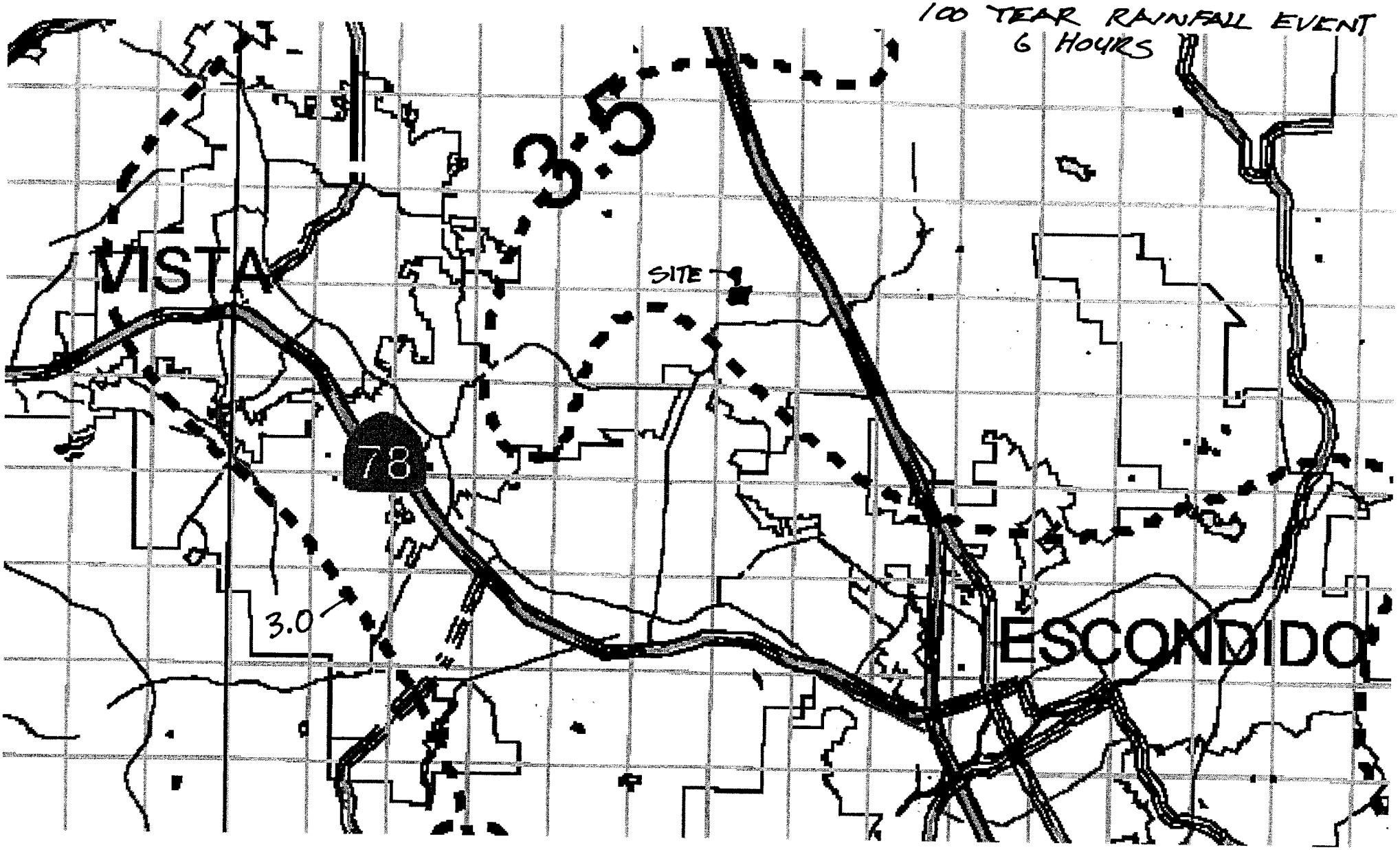
Table 3-1
RUNOFF COEFFICIENTS FOR URBAN AREAS

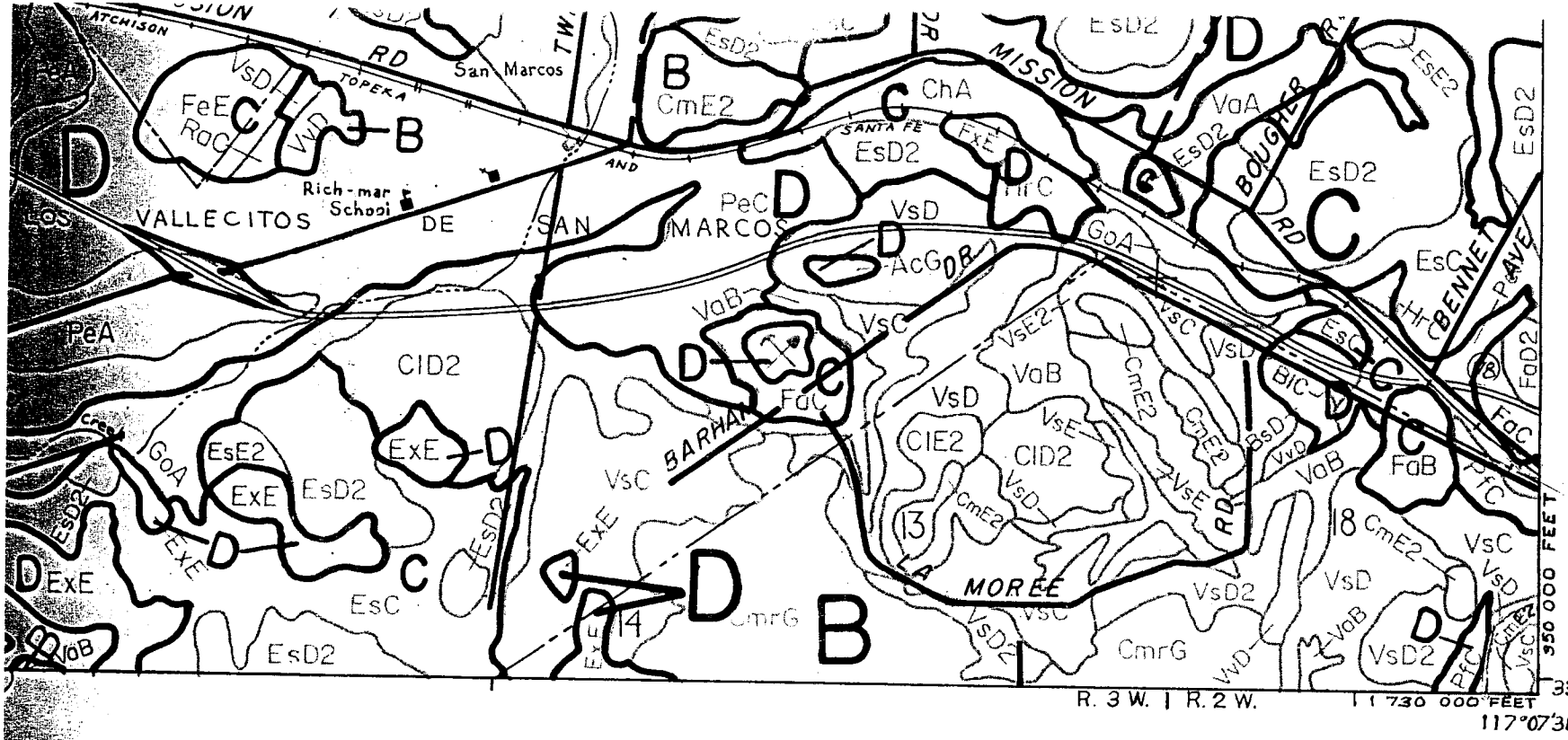
Land Use		Runoff Coefficient "C"				
			Soil Type			
NRCS Elements	County Elements	% IMPER.	A	B	C	D
Undisturbed Natural Terrain (Natural)	Permanent Open Space	0*	0.20	0.25	0.30	0.35
Low Density Residential (LDR)	Residential, 1.0 DU/A or less	10	0.27	0.32	0.36	0.41
Low Density Residential (LDR)	Residential, 2.0 DU/A or less	20	0.34	0.38	0.42	0.46
Low Density Residential (LDR)	Residential, 2.9 DU/A or less	25	0.38	0.41	0.45	0.49
Medium Density Residential (MDR)	Residential, 4.3 DU/A or less	30	0.41	0.45	0.48	0.52
Medium Density Residential (MDR)	Residential, 7.3 DU/A or less	40	0.48	0.51	0.54	0.57
Medium Density Residential (MDR)	Residential, 10.9 DU/A or less	45	0.52	0.54	0.57	0.60
Medium Density Residential (MDR)	Residential, 14.5 DU/A or less	50	0.55	0.58	0.60	0.63
High Density Residential (HDR)	Residential, 24.0 DU/A or less	65	0.66	0.67	0.69	0.71
High Density Residential (HDR)	Residential, 43.0 DU/A or less	80	0.76	0.77	0.78	0.79
Commercial/Industrial (N. Com)	Neighborhood Commercial	80	0.76	0.77	0.78	0.79
Commercial/Industrial (G. Com)	General Commercial	85	0.80	0.80	0.81	0.82
Commercial/Industrial (O.P. Com)	Office Professional/Commercial	90	0.83	0.84	0.84	0.85
Commercial/Industrial (Limited I.)	Limited Industrial	90	0.83	0.84	0.84	0.85
Commercial/Industrial (General I.)	General Industrial	95	0.87	0.87	0.87	0.87

*The values associated with 0% impervious may be used for direct calculation of the runoff coefficient as described in Section 3.1.2 (representing the pervious runoff coefficient, Cp, for the soil type), or for areas that will remain undisturbed in perpetuity. Justification must be given that the area will remain natural forever (e.g., the area is located in Cleveland National Forest).
DU/A = dwelling units per acre
NRCS = National Resources Conservation Service

COUNTY OF SAN DIEGO
RAINFALL ISOPLUVIALS
100 YEAR RAINFALL EVENT
24-HOURS




COUNTY OF SAN DIEGO
RAINFALL ISOPLUVIALS
100 YEAR RAINFALL EVENT
6 HOURS
3.5
VISTA
SITE
78
3.0
ESCONDIDO



CAUTION NOTES:

1. User is urged to refer to corresponding SUPPLEMENTAL DATA SHEET for assumptions, criteria, map sources, additional legend items, and necessary explanation of ratings shown on map.

2. This map does not eliminate the need for detailed on-site investigation of the soil and site to determine precise soil conditions prior to undertaking any construction, grading, planting, or other soils related activity.

North

SCALE 1:24000

0 2000 4000 6000 feet

0 ¼ mile ½ mile 1 mile

Represents 40 acres

FEDERAL ASSISTANCE — The preparation of this map was financed in part through a comprehensive planning grant from the Department of Housing and Urban Development.

Runoff

Base Map Source: U. S. Geological Survey with California State Coordinate System, Zone 6 Indicated

Prepared by: U. S. Department of Agriculture, Soil Conservation Service

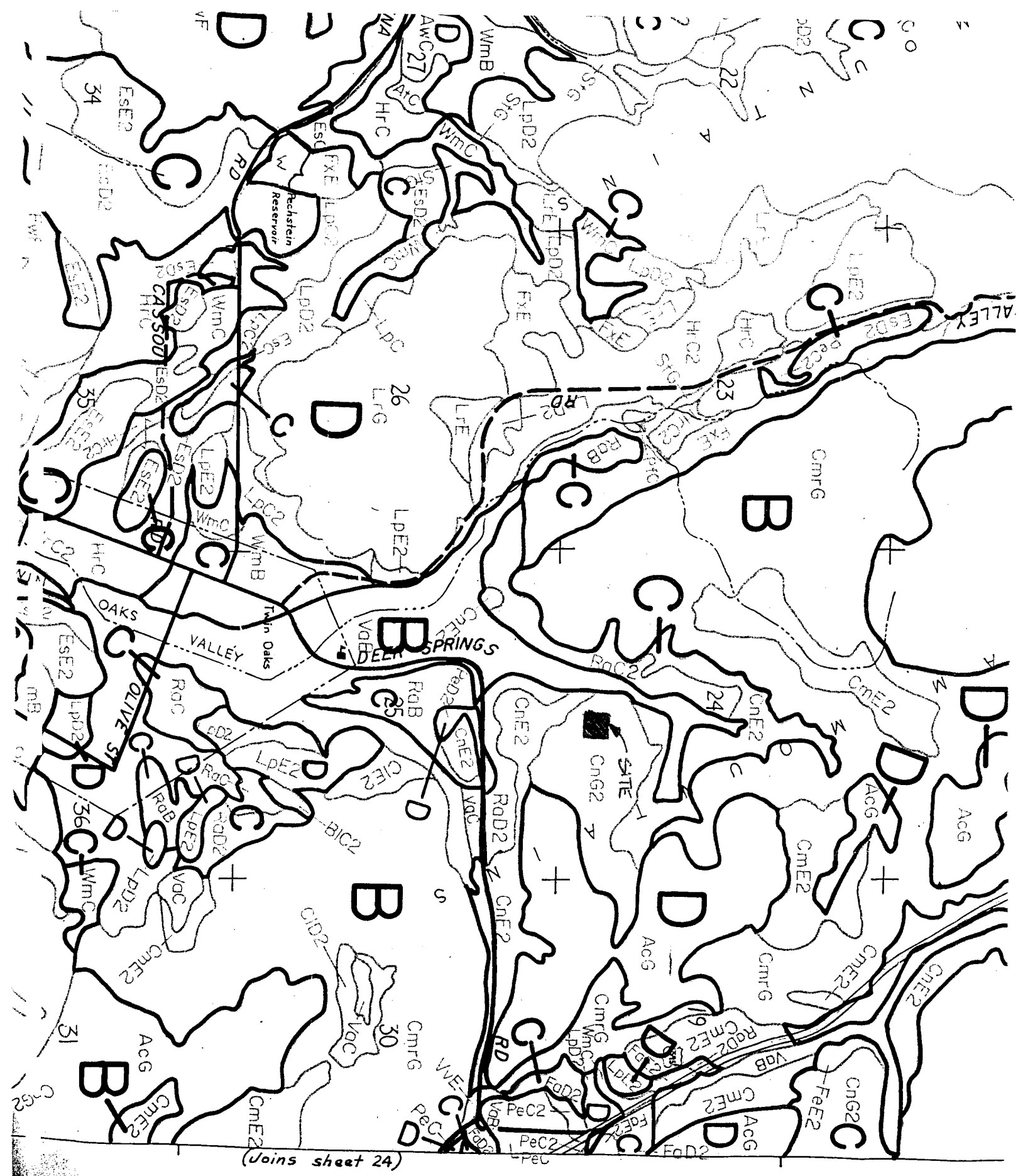
Published by: San Diego County Planning Department for the Comprehensive Planning Organization — 1969

SHEET NAME

San Marcos

SHEET NUMBER

23

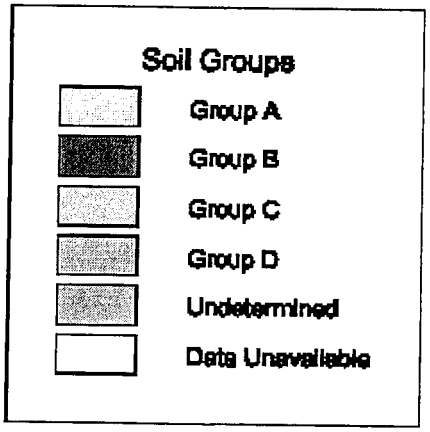


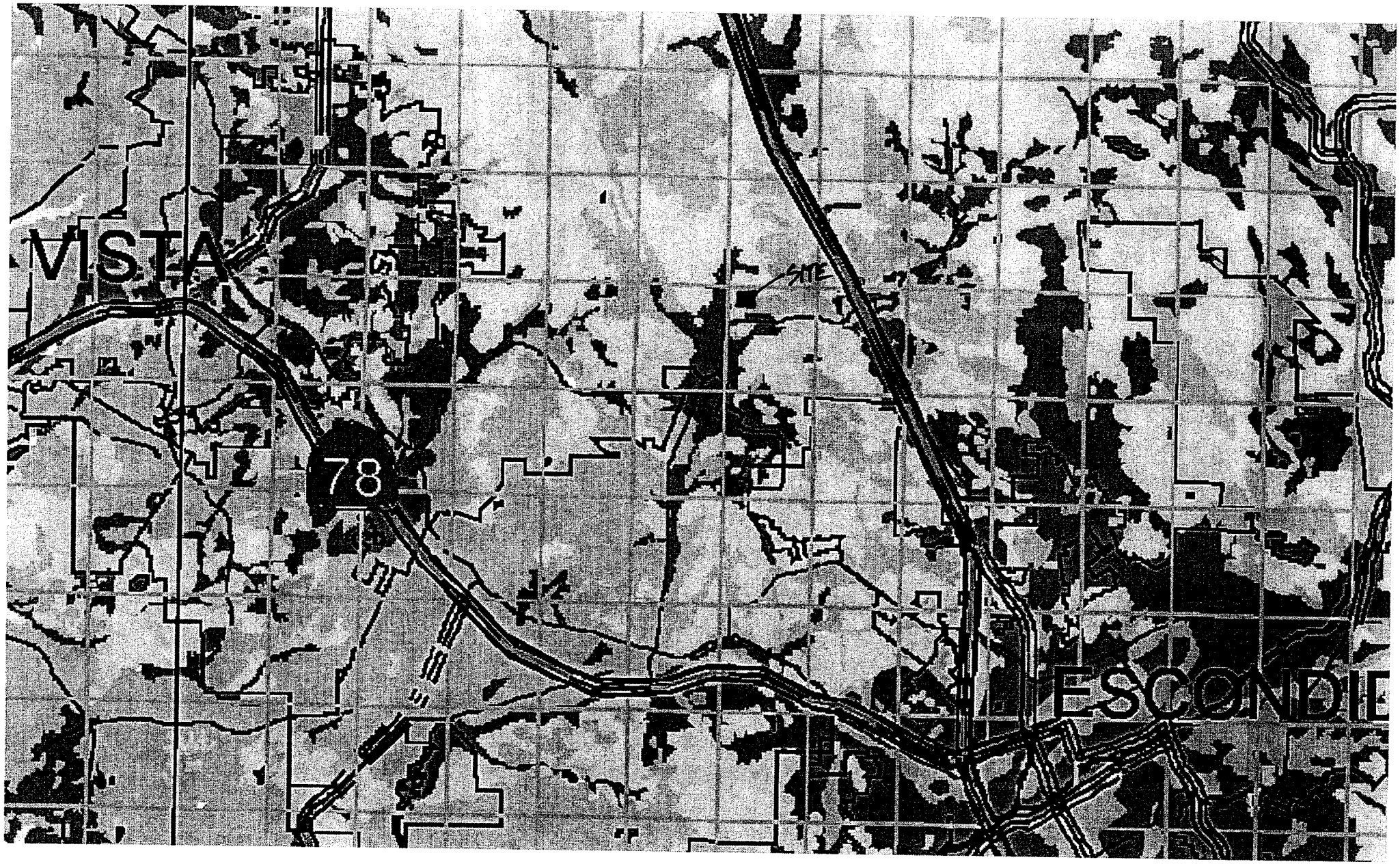
SHEET NUMBER 23
SAN MARCOS

County of San Diego Hydrology Manual

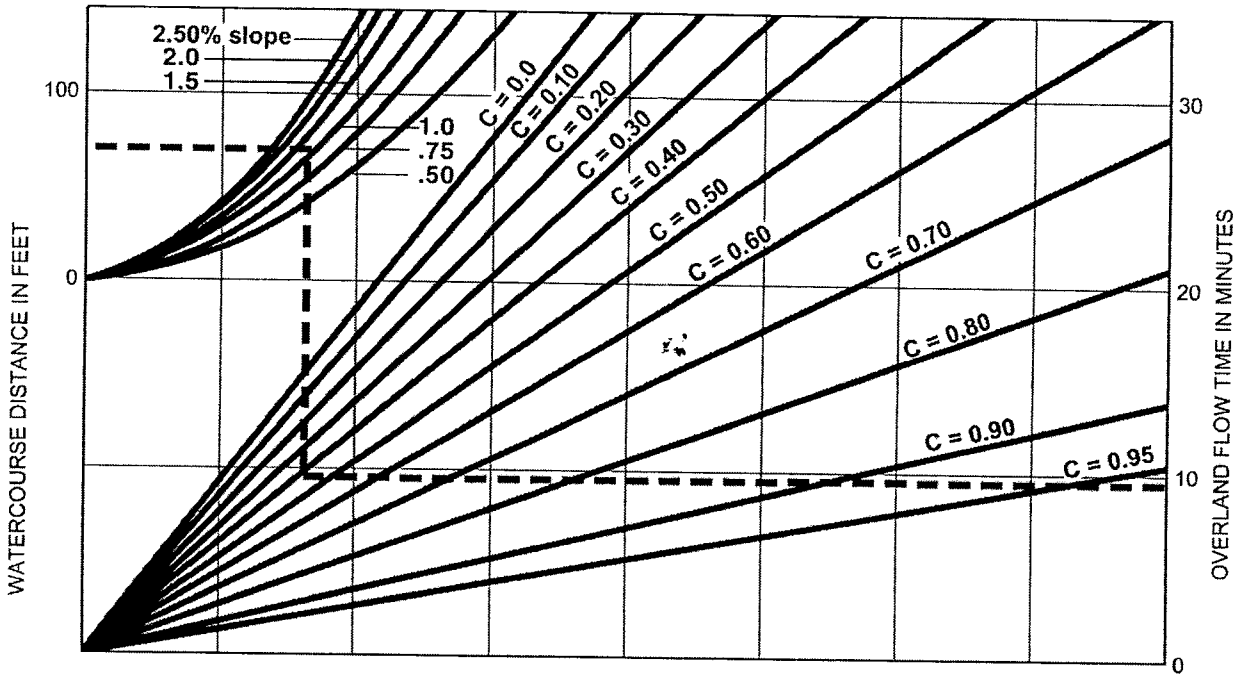
Soil Hydrologic Groups

Legend





SOIL GROUP "C"



EXAMPLE:

Given: Watercourse Distance (D) = 70 Feet
Slope (s) = 1.3%
Runoff Coefficient (C) = 0.41
Overland Flow Time (T) = 9.5 Minutes

$$T = \frac{1.8\,(1.1-C)\sqrt{D}}{\sqrt[3]{s}}$$

SOURCE: Airport Drainage, Federal Aviation Administration, 1965

FIGURE

Rational Formula - Overland Time of Flow Nomograph

3-3

Note that the Initial Time of Concentration should be reflective of the general land-use at the upstream end of a drainage basin. A single lot with an area of two or less acres does not have a significant effect where the drainage basin area is 20 to 600 acres.

Table 3-2 provides limits of the length (Maximum Length (L_M)) of sheet flow to be used in hydrology studies. Initial T_i values based on average C values for the Land Use Element are also included. These values can be used in planning and design applications as described below. Exceptions may be approved by the "Regulating Agency" when submitted with a detailed study.

Table 3-2

MAXIMUM OVERLAND FLOW LENGTH (L_M) & INITIAL TIME OF CONCENTRATION (T_i)

Element*	DU/ Acre	.5%		1%		2%		3%		5%		10%	
		L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i
Natural		50	13.2	70	12.5	85	10.9	100	10.3	100	8.7	100	6.9
LDR	1	50	12.2	70	11.5	85	10.0	100	9.5	100	8.0	100	6.4
LDR	2	50	11.3	70	10.5	85	9.2	100	8.8	100	7.4	100	5.8
LDR	2.9	50	10.7	70	10.0	85	8.8	95	8.1	100	7.0	100	5.6
MDR	4.3	50	10.2	70	9.6	80	8.1	95	7.8	100	6.7	100	5.3
MDR	7.3	50	9.2	65	8.4	80	7.4	95	7.0	100	6.0	100	4.8
MDR	10.9	50	8.7	65	7.9	80	6.9	90	6.4	100	5.7	100	4.5
MDR	14.5	50	8.2	65	7.4	80	6.5	90	6.0	100	5.4	100	4.3
HDR	24	50	6.7	65	6.1	75	5.1	90	4.9	95	4.3	100	3.5
HDR	43	50	5.3	65	4.7	75	4.0	85	3.8	95	3.4	100	2.7
N. Com		50	5.3	60	4.5	75	4.0	85	3.8	95	3.4	100	2.7
G. Com		50	4.7	60	4.1	75	3.6	85	3.4	90	2.9	100	2.4
O.P./Com		50	4.2	60	3.7	70	3.1	80	2.9	90	2.6	100	2.2
Limited I.		50	4.2	60	3.7	70	3.1	80	2.9	90	2.6	100	2.2
General I.		50	3.7	60	3.2	70	2.7	80	2.6	90	2.3	100	1.9

*See Table 3-1 for more detailed description

TABLE - 15

INTERPRETATIONS FOR LAND MANAGEMENT

KEY TO INTERPRETATION RATING SYMBOLS:

HYDROLOGIC SOIL GROUPS:

A - HIGH INFILTRATION RATE
B - MODERATE INFILTRATION RATE
C - SLOW INFILTRATION RATE
D - VERY SLOW INFILTRATION RATE

LIMITATIONS:

SL - SLIGHT DEGREE OF LIMITATION
M - MODERATE DEGREE OF LIMITATION
SE - SEVERE DEGREE OF LIMITATION

Soil Map Symbol[a]	Interpretation Rating[b]			Soil Map Symbol[a]	Interpretation Rating[b]		
	Hydrologic Group	Erodibility by Water	Conversion from Brush to Grass		Hydrologic Group	Erodibility by Water	Conversion from Brush to Grass
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
CmrG	B	SE (slp)	SE	FaC	C	SE (str)	SL
CnE2 [c]				FaC2	C	SE (str)	SL
(Cl)	B	SE (str)	SE	FaD2	C	SE (str)	SL
(Fa)	C	SE (str)	SE	FaE2	C	SE (str)	SL
CnG2 [c]				FaE3	C	SE (str)	SE
(Cl)	B	SE (slp)	SE	FeC	C	SE (str)	SL
(Fa)	C	SE (slp)	SE	FeE	C	SE (str)	M
Co	D	M (txt)	SL	FeE2	C	SE (str)	M
Cr	A	SE (txt)		FvD [c]			
CsB	A	SE (txt)	SL	(Fa)	C	SE (str)	SL
CsC	A	SE (txt)	SL	(Vs)	B	SE (str)	M
CsD	A	SE (txt)	SL	FvE [c]			
CtE	B	SE (str)	SL	(Fa)	C	SE (str)	SL
CtF	B	SE (slp)	M	(Vs)	B	SE (str)	M
CuE	B	SE (str)	M	FwF	D	SE (dpt)	SE
CuG	B	SE (slp)	M	FxE	D	SE (dpt)	SE
CvG	B	SE (slp)	M	FxG	D	SE (slp)	SE
DaC	D	SL	SL [d]	GaE	D	SE (dpt)	SE
DaD	D	SL	SL [d]	GaF	D	SE (slp)	SE
DaE	D	M (slp)	SL [d]	GoA	B	SE (str)	SL
DaE2	D	M (slp)	SL [d]	GrA	B	SE (str)	SL
DaF	D	SE (slp)	M [d]	GrB	B	SE (str)	SL
DcD [c]				GrC	B	SE (str)	SL
(Da)	D			GrD	B	SE (str)	SL
(Ur)	D			HaG	D	SE (slp)	M
DcF [c]				HmD	C	SE (str)	SL
(Da)	D			HmE	C	SE (str)	SL
(Ur)	D			HnE	C	SE (str)	M
DoE [c]				HnG	C	SE (slp)	M
(Da)	D	M (slp)	SL	HoC	C	SE (str)	SL
(Oh)	D	M (slp)	SE	HrC	D	SE (dpt)	SL
				HrC2	D	SE (dpt)	SL
EdC	B	M (txt)	SL	HrD	D	SE (dpt)	SL
EsC	C	SE (str)	SL	HrD2	D	SE (dpt)	SL
EsD2	C	SE (str)	SL	HrE2	D	SE (dpt)	SL
EsE2	C	SE (str)	SL	HuC [c]			
EvC	C	SE (str)	SL	(Hr)	D		
ExE	D	SE (dpt)	SE	(Ur)	D		
ExG	D	SE (slp)	SE	HuE [c]			
				(Hr)	D		
FaB	C	SE (str)	SL	(Ur)	D		

TER CP

LAND USE ELEMENT

1 RESIDENTIAL **1**
1.0 Dwelling Unit/1, 2 & 4 Acres

2 RESIDENTIAL **2**
1.0 Dwelling Unit/Acre

3 RESIDENTIAL **3**
2.0 Dwelling Units/Acre

6 RESIDENTIAL **6**
7.3 Dwelling Units/Acre

13 GENERAL COMMERCIAL **13**

15 LIMITED INDUSTRIAL **15**

17 ESTATE **17**
1 Dwelling Unit/2 & 4 Acres

18 MULTIPLE RURAL USE **18**
1 Dwelling Unit/4, 8, 20 Acres

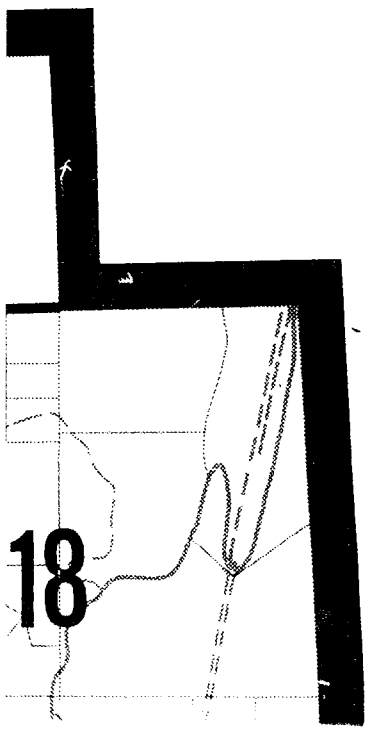
19 INTENSIVE AGRICULTURE **19**
1 Dwelling Unit/2, 4 & 8 Acres

20 AGRICULTURAL PRESERVES **20**
1 Dwelling Unit/8 Acres

21 SPECIFIC PLAN AREA **21**

24 IMPACT SENSITIVE AREA **24**
1 Dwelling Unit/4, 8, 20 Acres

26 VISITOR, SERVING COMMERCIAL **26**



LEGEND

Freeways	Local Roads	Intermittent Drainage	
Prime Arterials	Sub Local Roads	Contours	
Major Roads	Trails	Property Lines	

LAND USE ELEMENT

1 RESIDENTIAL 1
1.0 Dwelling Unit/1, 2 & 4 Acres

2 RESIDENTIAL 2
1.0 Dwelling Unit/Acre

3 RESIDENTIAL 3
2.0 Dwelling Units/Acre

6 RESIDENTIAL 6
7.3 Dwelling Units/Acre

13 GENERAL COMMERCIAL 13

15 LIMITED INDUSTRIAL 15

17 ESTATE 17
1 Dwelling Unit/2 & 4 Acres

18 MULTIPLE RURAL USE 18
1 Dwelling Unit/4, 8, 20 Acres

19 INTENSIVE AGRICULTURE 19
1 Dwelling Unit/2, 4 & 8 Acres

20 AGRICULTURAL PRESERVES 20
1 Dwelling Unit/8 Acres

21 SPECIFIC PLAN AREA 21

24 IMPACT SENSITIVE AREA 24
1 Dwelling Unit/4, 8, 20 Acres

26 VISITOR, SERVING COMMERCIAL 26

ALL STREETS SHOW

1985 CURRENT URB/
DEVELOPMENT BOU

ESCONDIDO SPHERE
INFLUENCE BOUND

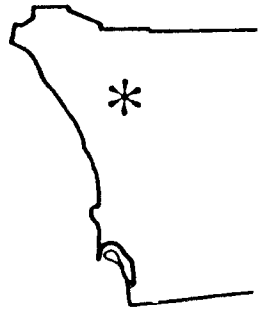
COUNTRY TOWN B(

NOTES: *1. PROPERTY*
mational pu
and do no
Only the c
areas are ad

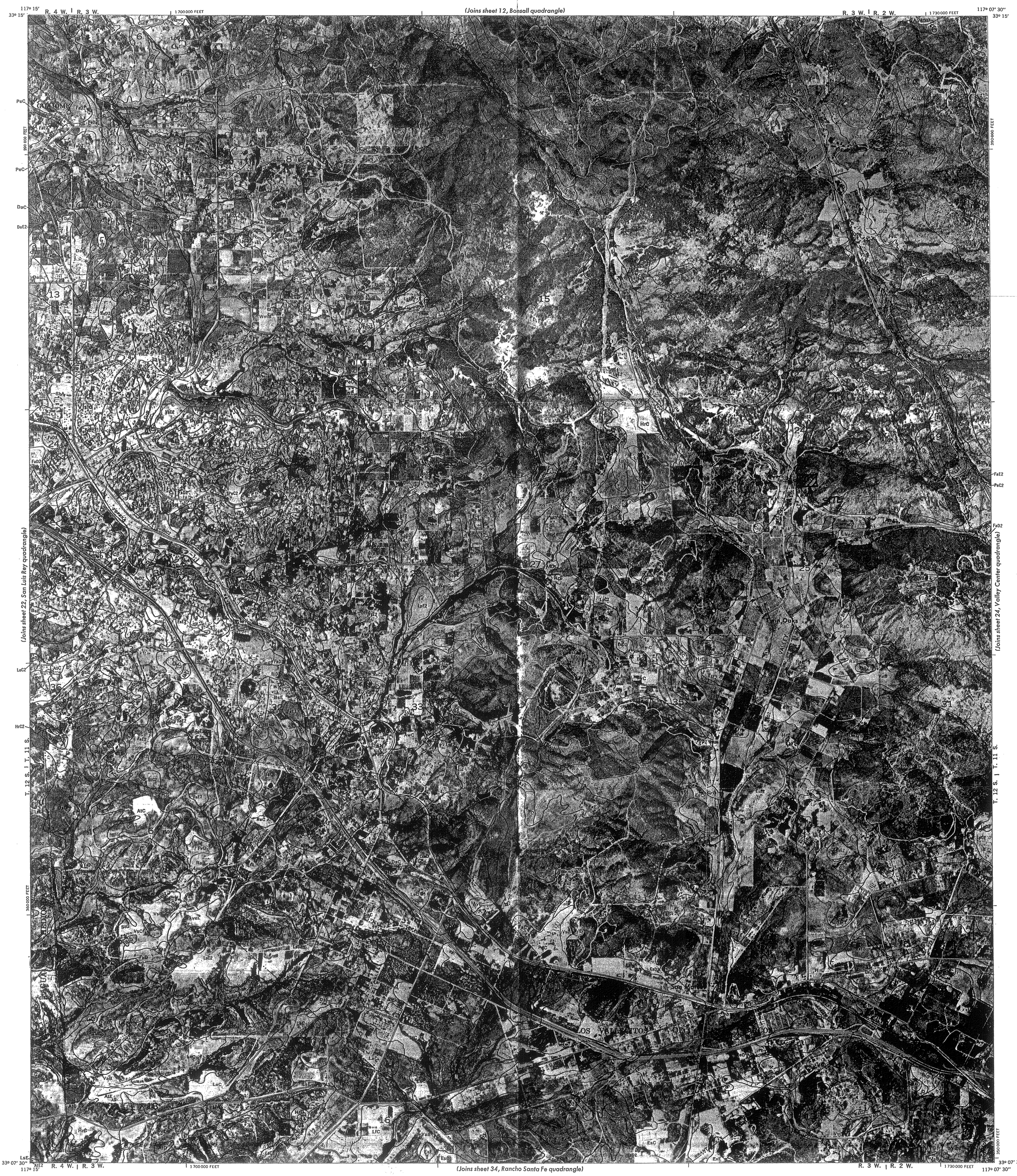
* *2. ONE ACR*
filed after
residential
(1.) The
Sph
(2.) The
una
poli

LEGEND

Freeways
Prime Arterials
Major Roads
Local Roads
Sub Local Roads
Trails
Intermittent Drainage
Contours
Property Lines
Study Area Boundary



NORTH COL



Soil Survey by USDA, Soil Conservation Service in cooperation with the University of California Agricultural Experiment Station.

Photobase compiled 1970 from 1967-68 aerial photography.

Control from USGS and USC & GS.

Polyconic projection. 1927 North American datum.

10,000-foot grid based on California plane coordinate system, zone 6.

Land division corners are approximate.

Scale 1:24 000

1 ¾ ½ ¼ 0 1 2 Miles

5 000 4 000 3 000 2 000 1 000 0 5 000 10 000 Feet

N

This map is one of a set of 76 compiled 1969-70 by the Soil Conservation Service.

SAN DIEGO AREA, CALIFORNIA NO. 23

Cooperating Agencies
San Diego County Planning Department
San Diego County Comprehensive Planning Organization
U.S. Dept. of Agriculture-Forest Service
U.S. Dept. of the Interior-Bureau of Indian Affairs
Dept. of the Navy-U.S. Marine Corps

NORTH COUNTY Metropolitan Planning Area Sheet 2

VALLEY CENTER CP

BONSALL CP

21 SPA (0)

21 SPA (0.31)

21 SPA (1.38)

21 (SPA .23)

SITE

Twin Oaks

Jesmond Dene

ESCONDIDO

SAN MARCOS

CITY BDY

SAN DIEGO CO

SAN DIEGO CO / ESCONDIDO CITY BDY

Dixon Dam & Lake

City Park

LAND USE ELEMENT

1 RESIDENTIAL 1	1.0 Dwelling Unit/1, 2 & 4 Acres	
2 RESIDENTIAL 2	1.0 Dwelling Unit/Acre	
3 RESIDENTIAL 3	2.0 Dwelling Units/Acre	
6 RESIDENTIAL 6	7.3 Dwelling Units/Acre	
13 GENERAL COMMERCIAL 13		
15 LIMITED INDUSTRIAL 15		
17 ESTATE 17	1 Dwelling Unit/2 & 4 Acres	
18 MULTIPLE RURAL USE 18	1 Dwelling Unit/4, 8, 20 Acres	
19 INTENSIVE AGRICULTURE 19	1 Dwelling Unit/2, 4 & 8 Acres	
20 AGRICULTURAL PRESERVES 20	1 Dwelling Unit/8 Acres	
21 SPECIFIC PLAN AREA 21		
24 IMPACT SENSITIVE AREA 24	1 Dwelling Unit/4, 8, 20 Acres	
26 VISITOR, SERVING COMMERCIAL 26		

ALL STREETS SHOWN ARE EXISTING ROAD SYSTEM

1985 CURRENT URBAN DEVELOPMENT BOUNDARY

ESCONDIDO SPHERE OF INFLUENCE BOUNDARY

COUNTRY TOWN BOUNDARY

NOTES:

1. *PROPERTY LINES shown on this map are for informational purposes only; these lines are subject to change and do not necessarily represent legal buildings sites. Only the category boundaries that designate Land Use areas are adopted.*

* 2. *ONE ACRE average lot size requirement. Subdivisions filed after August 13, 1980, are limited to a maximum residential density of 1 dwelling unit per gross acre if:*
(1.) The Subdivision is located within the Escondido Sphere of Influence, and;
(2.) The Subdivision does not qualify for exemption under Policy 10 (refer to North County Metropolitan Subregion Plan Text.)

LEGEND

Freeways — Local Roads — Intermittent Drainage

Prime Arterials — Sub Local Roads — Contours

Major Roads — Trails — Property Lines

Collector Roads — Section Lines — Study Area Boundary

NORTH COUNTY METROPOLITAN PLANNING AREA

COUNTY OF SAN DIEGO

0 1000' 2000' 3000' 4000' 5000'

0 1/8 mi. 1/4 mi. 1/2 mi. 3/4 mi. 1 mi.

MAP PREPARED BY MAPPING SECTION, SAN DIEGO COUNTY, DEPARTMENT OF PUBLIC WORKS

CERTIFICATE OF ADOPTION

I hereby certify that this Plan, consisting of a text and this map, as amended by General Plan Amendment (GPA 90-04, Item 1), is the North County Metropolitan Subregional Plan, Sheet 2, is a part of the Land Use Element Section II, Part XXV, of the San Diego County General Plan, and that it was approved by the San Diego County Planning Commission on the 7th day of September, 1990.

Lynne Leichtkuss — Commission Chair

Attest: Lauren M. Wasserman — Commission Secretary

I hereby certify that this Plan, consisting of a text and this map, as amended by General Plan Amendment (GPA 90-04 Item 1), is the North County Metropolitan Subregional Plan, Sheet 2, is a part of the Land Use Element, Section II, Part XXV, of the San Diego County General Plan, and that it was adopted by the San Diego County Board of Supervisors on the 19th day of December, 1990.

Leon L. Williams — Board Chair

Attest: Kathleyn A. Hotton Thomas J. Pastuszka — Asst Clerk of the Board

Adopted:	GPA 78-03	January 3, 1979	Fifth Amendment:	GPA 84-03	December 19, 1984
First Amendment:	GPA 79-02	December 18, 1979	Sixth Amendment:	GPA 88-01	June 1, 1988
Second Amendment:	GPA 80-01	August 13, 1980	Seventh Amendment:	GPA 88-03	December 14, 1988
Third Amendment:	GPA 81-02	December 9, 1981	Eighth Amendment:	GPA 90-04	December 19, 1990
Fourth Amendment:	GPA 84-02	August 22, 1984			

I, HEREBY CERTIFY THIS TO BE A TRUE COPY OF DOCUMENT NO. 745009 AS FOUND IN THE OFFICE OF THE SAN DIEGO COUNTY CLERK OF THE BOARD.

1.22.93 — Date — Deputy Clerk of the Board

NORTH COUNTY METRO SRA SHEET 1

NORTH COUNTY METRO SRA SHEET 4

NORTH COUNTY METRO SRA SHEET 3

Doc.# 745009